The proposals in the field of secondary education provide for curbs on the entry of children into the schools. This is unfortunate, and the goal of secondary education for all who can benefit from it, at least to the end of the first cycle, will not be lost to sight. But there is no goal, for the present or the future, which provides for entry into academic secondary school of all whose parents want them to go there, without regard to their suitability. The wide variation of skills and aptitudes makes it essential that there should not be a hierarchy of schools, with the academic high school being regarded as the apex of the system. Rather there should be a diversified school system which will provide for each pupil an education suited to his capabilities, and one which will send him into the world equipped with some skill for which the community has a use.

3. Policy and Strategy

The rapid expansion of secondary education will be slowed down by three means: an entrance examination, a system of tuition fees (combined with scholarships for deserving poor students), and an entrance examination for second cycle.

The first cycle will be regarded as the natural termination of secondary education for a large proportion of the pupils. There will be a certificate for successful passing of the examination, which certificate, it is hoped, will receive wide acceptance by employers as a mark of proficiency. The level of standing in this examination will determine eligibility for admission to the second cycle, which will be on a competitive basis. It is intended that the second cycle should contain an appreciably smaller number of pupils than the first, and be regarded in part as a preparation for university. The first cycle will not be regarded in the same light, and its cirriculum will not be oriented to the requirements of the universities.

Some steps can be taken to prepare students who do intend to enter the universities. Some useful measures for this purpose are:

- strengthening of the foreign language teaching in grades 5 and 6 of secondary school;
- visits by students to different faculties to familiarize them with the methods and programs of university education;
- inclusion in the curriculum of 5th and 6th grades of private study programs, and preparation by the students of study papers so that they become used to referring to books and materials outside their formal programs;
- organization during summer holidays of preparatory courses for secondary school graduates proceeding to the university;
- development of a strong occupational guidance service so that students are enabled to consult about their future careers and obtain the necessary information about the market demand for different skills.

In the first cycle some pre-vocational instruction will be given to all students, so that every student will have some experience of handwork and will learn to recognize its importance. Vocational education will not be regarded as the refuge of those students who are weak in academic subjects, but as the place for those who are strong in vocational subjects. Laboratories and workshops in all secondary schools will be equipped to the best possible standards, and the help of local education authorities will be enlisted to secure that equipment.

The Government views with favour the establishment and expansion of private secondary schools, but will expect them to conform to this new pattern.

As indicated in the section on Teacher Training, special attention will be given to the training and re-training of teachers for this program. Special attention will also be given to the improvement of school textbooks.

For those students who fail in the entrance examination, or who cannot be admitted to secondary school for any reason, e.g. lack of facilities in their area, the Government will provide facilities for what may be termed leisure-time self-help education. There are already some private activities in this field. The needs for further facilities will be studied, including the kinds of books to which students should be directed. The possibilities of radio instruction for such students will also be examined.

One method of developing self-help education is through the establishment of community centers in the towns. These will be assisted on a trial basis. Community centers, in addition to providing recreation and sports facilities, can sponsor lecturers who bring knowledge in popular form to the people. There can also be regular forms of free training for center members. All this is a suitable area for the participation of the local education committee using local taxation resources.

Both primary and secondary school buildings will be used to the full, and the possibilities of using them in the evening to improve the general knowledge of the community will be examined closely. The possibility of running the schools on a shift basis so as to accommodate more pupils will also be looked into, though this is not without its difficulties.

The target for the Third period is thus 400,000 students in school, predominantly in the first cycle. The annual additional number of students will be 20,000 (except in 1341-42) and a total of nearly 5,000 additional teachers will be needed. The total cost will be Rls.2.3 billion. Details are as follows:

(pp 55) **SECONDARY EDUCATION: COSTS IF 400,000 CHILDREN ARE IN SCHOOL BY 1346**

School Year	Total No.of students in school (000)	No.of additional students in school (000)	No.of additional teachers (25 students per teacher)	Construction & equipment (Rls.8,000 per student) Rls. Mil.	Teachers' salary (Rials 6000 p.m. or 72000 p.a.) Cumulative Rls. Mil.	Miscellaneous Rls. 600 per student Rls. Mil.	Total cost Rls. Mil.
1341-42	300	25	1,000	200	72.0	15	287.0
1342-43	320	20	800	160	129.6	12	301.6
1343-44	340	20	800	160	187.2	12	359.2
1344-45	360	20	800	160	244.8	12	416.8
1345-46	380	20	800	160	302.4	12	474.4
1346-47 (1st half)	400	20	800	160	331.2	12	503.2
Total	400	125	5,000	1,000	1,267.2	75	2,342.2

TEACHER TRAINING PROGRAM

I. Background Information

The program which follows outlines the present organization for training teachers in Iran and the ways in which that organization will be extended and reorganized to meet the heavy demands of the Third Plan.

No educational program can succeed without a sufficient number of qualified teachers. To obtain them two factors are necessary: first, a body of competent and enthusiastic individuals coming forward each year, and second, good teacher training institutions with programs suited to current needs. A sufficient number of good recruits will not be forthcoming unless the status of teachers is raised and special attention is given to their welfare. Good conditions bring good recruits; good recruits plus good institutions plus good teacher training programs will produce the needed teachers for a modern system. This, in simple outline, is the aim of the teacher training program.

These are the categories of teachers that are required:

- kindergarten teachers and principals;
- primary school teachers and principals;
- teachers and principals for secondary schools, both academic and vocational;
- teachers for particular programs such as the literacy campaign, fundamental education, and special schools (schools for handicapped, maladjusted and problem children).

The present training situation is that primary school teachers are trained in Normal secondary schools. Secondary school teachers, after having completed their secondary education, are trained in Tehran and Tabriz Teachers' Colleges. Teachers for vocational schools are trained in the Tehran Institute of Technology. The table below shows teacher training activities in the academic year 1338-39:

IRAN: TEACHER TRAINING, 1338-39

Description	No.	Purpose	Duration of Course (Years)	No. of Students	No. of Graduates
1. Normal schools	27	Teachers for primary schools	2	2,674	1,174
2. Agricultural normal schools	13	Teachers for rural primary schools	2	n.a.	500
3. Tribal normal schools	8	Teachers for tribal schools	1	239	239
4. Tehran National Teachers' College	1	a) Teachers for secondary schools	3	1,349	300
		b) Evening classes preparing primary school teachers to become secondary school teachers	3	443	n.a.
		c) Supervisors & principals for primary schools	3	169	n.a.
5. Tabriz Teachers' College	1	Teachers for secondary schools	3		64
6. Tehran Institute of Technology	1	Teachers for vocational schools	4	87	n.a.

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n.a. = not available. N.B. In addition to the above, as from Mehr, 1339 a 1-year teacher training program has begun, designed to produce at the outset 2,500 primary school teachers from high school graduates. In 1339, 1849 students registered for this course.

From the table, which shows a total output, even including the new one-year primary teachers' course, of well under 5,000 teachers a year, it is plain that the number of teachers trained annually is quite inadequate to cope with the rapidly growing numbers of students in the schools.

Weakness in the Present Situation:

1. Teachers are often unqualified. Out of 11,297 secondary school teachers only 4,500 are university graduates. Only 55% of primary school teachers are trained for teaching.

2. The number of students has increased at a faster rate than the number of teachers. In 1338-39 the enrolment in primary school rose by 180,000 whereas the total number of normal school graduates available for teaching did not exceed 2,000. Assuming a desirable teacher-student ratio of one teacher for 30 each pupils, this means a shortfall of 4,000 teachers in the one year.

3. Teacher training methods are poor. In both the Normal Schools and Teachers' Colleges the same defects are to be found. The principles of educational theory are not organically incorporated in the training of future teachers. Subject matter classes are not integrated with the study of teaching methods and practice. For example, teacher training programs in chemistry or mathematics do not concern themselves with the methods of teaching chemistry or mathematics but provide only for additional instruction in the subjects themselves. The students may come to learn more about these subjects, but

they do not learn how to teach them. Apart from the pedagogical weaknesses involved, this approach calls for an unnecessary duplication of efforts and facilities. The same courses of studies which are given in the university faculties of science are also given in the Teachers' Colleges. This duplication should be eliminated and the teacher training institutions should be set free to go about their appropriate task which is teaching teachers to teach.

4. Training programs do not exist for such specialized teaching personnel as secondary school counsellors and kindergarten principals.

5. Since teachers' salaries have been, in the past, unduly low, the best qualified and most competent persons have not been attracted to the teaching profession.

II. POLICY

In the Third Plan all teacher training programs will be regarded as a co-ordinated whole, no matter which authority actually carries on the work. The National Teachers' College will undertake research into teaching methods and teaching needs, and will itself instruct in teaching method. So far as is possible it will retire from giving basic subject matter instruction. It will concentrate rather on teaching how to teach, and not on imparting knowledge in, say, chemistry or mathematics or history. Such instruction should be obtained at other regular tertiary educational institutions.

The National Teachers' College will establish a special department for continuous qualitative and quantitative evaluation of the teacher training program.

In order to raise the status and prestige of the teaching profession the following steps will be taken:

1. The new scale of teachers' salaries will be fully implemented. But the increase will be conditional upon the re-training of unqualified teachers.

2. Teachers will receive additional rewards and recognition by such methods as being granted priority in housing programs, etc.

3. A program will be undertaken to raise the prestige of the teaching profession, Such devices as designation of a "Teachers' Day", and the formation of an Annual Teachers' Congress will be used. Individuals of high authority and social standing will be persuaded to teach at least one hour a week in their specialized fields.

4. Parent-teacher associations will be strengthened.

III. Objectives and Targets

For the Third Plan, the broad objective of the teacher training program is to meet the demand for well-qualified teachers for primary, secondary and vocational schools. This includes the re-training of unqualified teachers, the training of teachers for "special schools", and the training of leaders for the whole system.

The table below shows the number of teachers required for primary and secondary schools during the Third Plan period. It should be noted that because of the 5½ year period of the Plan, it is necessary to provide teachers for 6 years.

DEMAND FOR TEACHERS*

Type of School	Total No. of additional teachers required to meet Third Plan target	Estimate of teachers wastage over the period	Total No. of teachers required per year	Total No. of additional teachers required for Plan period (6 years)
1. Primary schools	22,698	15,000	6,283	37,698
2. Secondary schools	5,000	3,450	1,408	8,450
Total	27,698	18,450	7,691	46,148

Three types of teacher training programs for primary and secondary school teachers will be undertaken to meet the demand during the Third Plan period.

These involve:

1. Expansion and improvement of the programs already in operation.
2. Launching emergency programs.
3. Starting an intensive program for training educational leaders for all types of schools.

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* For vocational and agricultural teachers see Manpower Plan Frame.

Primary School Teachers Training Program

The training program for primary school teachers should be basically the same for both rural and urban teachers. Provisions will be made in the training program for the small amount of specialized training which pertains to the area in which the teacher is to work. For this purpose it is essential to revise the curriculum of both ordinary normal schools and agricultural normal schools. To provide the number of primary school teachers, required, the following actions will be taken:

(a) The existing normal schools will be expanded to full capacity. Top priority will be given to training of women teachers for village schools. In this way the number of graduates from normal schools will be increased to 2,500. Tribal normal schools will be expanded to develop primary education among tribes.

(b) The one-year courses which are established in the center of provinces will be expanded to turn out 3,800 teachers per year.

Total allocation for training primary school teachers is estimated at Rls.318 million.

Secondary School Teacher Training Program

It has been demonstrated that the number of teachers required annually for secondary schools during Third Plan is about 1,400. This will be supplied from two sources: (i) Teachers' Training Colleges; and (ii) one-year emergency program.

Teachers' Training Colleges

At present there are two teachers' training colleges: Tehran National College with about 300 graduates per year and Tabriz Teachers' College with about 63 graduates per year. To meet a major proportion of the need these two colleges will be expanded at a fast rate. Furthermore, provision will be made to enable those students of Tehran University who would like to become teachers to take education courses at the Tehran Teachers' College while they are studying at the university. Meanwhile at each of the provincial universities a department of education will be set up with the co-operation of the Tehran Teachers' College. This will give university students an opportunity to study education while they are pursuing their specialized field. The cost of these departments will be covered under the program of provincial universities. Thus it is estimated that about 1,000 teachers will become available each year.

Emergency Secondary Teachers' Program:

In order to meet the annual shortage of 400 secondary school teachers, the Tehran National Teachers' College will carry on a one-year training program. Selected graduates of different departments of the universities will be given one year's training in education theory, teaching methods and practices. This program will train 400 teachers per year. The cost of this program will be included with that of Tehran National Teachers' College.

The Intensive Program:

This program will be designed to train educational leaders for both primary and secondary schools. Students will be given more intensive training in educational fields. It is proposed that the training program for primary school teachers and secondary school teachers should be extended to three years and four years respectively. The students will also be required to undertake personal study and research. The program will be executed by the Tehran National Teachers' College with the cooperation of the Ministry of Education. Since an estimate of numbers of educational leaders required for Third Plan is not available at present, it is proposed that the Ministry of Education together with the Tehran National Teachers' College will determine the needs in this field. A full description of this program will be given at the project stage.

Program for Re-training of Existing Primary & Secondary School Teachers:

As has been stated, of the existing 40,500 primary school teachers 45% and of 11,500 secondary school teachers 55% have not received adequate training. To overcome this severe shortcoming and to bring the teachers' information up-to-date an extensive retraining program will be carried out during the Third Plan. This program will be executed under the supervision of Tehran National Teachers' College in Tehran as well as in the centers of provinces. Each year about 3,400 primary school teachers will be re-trained. Thus about 20,400 teachers will receive appropriate training during Third Plan. The program of re-training for secondary school teachers will be carried out at both Tehran National Teachers' College and at Departments of Education of the provincial universities. An annual number of about 1,170 will be thus trained totalling 7,020 for the six years of the Plan period.

The re-training cost of a teacher is estimated about Rls.3,000, thus the cost of re-training the total number of primary and secondary teachers who are below acceptable standards (27,000 in all) will be approximately Rls.81 million during the Plan period. This is an ambitious but feasible objective.

Program of Tehran Teachers' Training College:

(a) Objective

Efforts will be made to strengthen and expand the Teachers' Training College as a strong teacher training body. All teachers' training activities whether performed by the college or other training institutions will be carried out under the general supervision of Tehran National Teachers' College. The basic functions of the College are:

i) Supervision of normal schools and one-year emergency programs for training primary school teachers.

ii) Teaching educational theory and methods to university students who are selected to train as teachers or who wish to choose the teaching profession in future.

iii) Co-operation with the provincial universities in establishing Departments of Education at provincial universities.

iv) Execution of "Intensive Program" for training educational teachers.

v) Supervision of the re-training programs for primary and secondary school teachers.

vi) Co-operation with Tehran Institute of Technology in training vocational teachers and Karaj Agricultural College in training teachers for agricultural schools.

vii) Research on teaching methods and practices applied in Iranian schools and evaluation of the activities of various training institutions.

(b) Cost of the Program

The 1339 budget of the Teachers' Training College amounts to Rls.80.4 million. In addition to the above sum the following funds are allocated to the College for the Plan period:

i)	Construction	Rls.200 million
ii)	Equipment	" 20 "
iii)	Training and recruitment of technical & teaching staff......	" 100 "
iv)	Housing for students selected to become teachers (for 500 students at Rls.130,000 each)......	" 65 "
v)	Additional current cost (research program, full-time staff, execution of "Intensive Program", and cooperation with other teacher training institutions).....	" 200 "
	Total	Rls.585 million

COST OF TEACHER TRAINING PROGRAMS

Type	Programs	Cost (Rls. Mil.)
Primary	One-year emergency courses Normal schools	318
Secondary	Tehran National Teachers' College	585
	Department of Education at Provincial universities	See University Program
Re-training	Short courses for existing primary and secondary teachers	81
	Total.	984

Kindergartens and Creches

1. Background Information:

There has been no government program for operations of creches, but there are about 159 state kindergartens and 130 private ones. Private kindergartens are found mostly in Tehran. No creches are known. The principal problems with very young children are two: the language difficulty in certain areas such as Azerbaijan, Kurdistan and Khuzistan, and the tendency for children of mothers who work in factories and similar places to be felt entirely without care.

2. Policy and Objectives

No program of government operation for either kindergartens or creches is proposed, but a policy for encouraging private enterprise in both fields will be begun. For kindergartens the government will undertake inspection, and a training program will be commenced. For creches legislation will be enacted requiring specified factories to provide creche facilities, and the Government will also subsidize training for creche supervisors. The cost of the training program is estimated at Rls.10 million. The details will be given at the project stage.

GENERAL DEPARTMENT OF FINE ARTS

1. Background Information

The General Department of Fine Arts performs four major activities:

1. National Arts Education;
2. Audio-visual;
3. Dramatic Arts; and
4. Museums and National Folklore.

National Arts Education

In the academic year 1338-39, there were five Fine Arts honarestans - 3 for boys and 2 for girls. The students in these institutions are given 3 years of training in Painting, Sculpture, and National and Decorative Arts.

The number of Fine Arts students in 1339 was 340. As from Mehr 1339 the High Honarestan for Decorative Arts has started its work. About 50 graduates of Fine Arts Honarestan have enrolled in a 4-year course in Decorative Arts.

2. Objectives of the Program for 1341-46

During the Third Plan Fine Arts Honarestans will be set up in Mashad, Shiraz and Abadan. The construction and equipment cost for one honarestan is estimated about Rls.7.5 million making a total of Rls.22.5 million for the 3 honarestans planned. No fund is provided for purchase of land which should be a local donation. The annual operation cost for each honarestan is Rls.2 million. Assuming that it will take 2 year to construct & equip each honarestan, the operating costs for the 3

honarestans for four years is about 24 million rials. Thus the total allocation for this program is 46.5 million rials for the Third Plan. Rls.20 million is also allocated for audio-visual activities making a total of 66.5 million rials for the Department of Fine Arts.

PHYSICAL EDUCATION

1. Background Information

Iran is notably short of sports facilities. Schools rarely have adequate playgrounds. The towns lack parks and proper recreational areas. Physical education has been neglected. One step which should be taken is to ensure that all new schools have a sufficient playing area, and that it is adequately used.

Some form of physical education is an essential part of the weekly curriculum. Children should have regular sports days, and where possible there should be a daily physical exercise period. A physical training instructor should be a regular member of staff in all secondary schools. Of course he or she needs training. Such training should be as a regular part of secondary school teacher training programs.

For support of the teacher training portion of the program an amount of Rls.5 million has been allocated for the Third Plan. No special allocation has been made for the salaries of physical training instructors in the schools as their annual salaries should appear as part of the regular staffing budget.

As to the cost of special sports facilities, as a first principle land should not be purchased. Local people should be asked to donate it. In the case of playgrounds and athletic fields attached to school buildings and used in school programs, the Ministry will try to have this land, also, donated, but in any case every school will have sufficient land.

The provision of sports facilities presents a good opportunity for applying the new policy that local people should be partially responsible for education costs. Local citizens will be encouraged to taken on the business of developing and equipping sports fields, building swimming pools, paying for sports equipment, and so on. Parents of the school children can also be charged a special sports fee, as is done in other countries. Implementation of such a policy will take time, and in the case of such facilities as holiday camps it may be difficult to secure all of the necessary funds by voluntary means. The Government will therefore pay 50% of the costs, provided that local committees pay the remainder.

2. Allocation

Physical Education covers three areas of activities:

1. Sports programs for schools.
2. Students' holiday camps and extra-curricular activities.
3. Sports facilities and championships for youth.

Objectives for the Third Plan

1. Sports Program for Schools

Training of physical instructors, training courses, camps, etc.	Rls. 5 mil.
Sports facilities for schools: stadiums, playgrounds, swimming pools, etc. (half cost)	Rls. 75 mil.
Total	Rls. 80 mil.

2. Students' Holiday Camps and Extra-curricular Activities:

(a) Developing of land (not purchased) for site of camps, construction, etc. for 11 months .,..............	Rls.11 mil
(b) Extension of holiday camps activities to a larger number of students	Rls.27 "
(c) Extra-curricular activities, libraries, students' cooperatives, students' clubs, etc.	Rls.20 "
Total	Rls.38 "

3. Sports Facilities and Championships for Youth

(a) Completion of provincial sports facilities	Rls.17 "
(b) Completion of Amjadieh Stadium	Rls.10 "
Total	Rls.27 "

Total funds recommended for expansion of Physical Education during Third Plan amounts to Rls.145 million.

THE UNIVERSITIES

1. Background Information

Iran's tertiary education structure consists of six regular public universities, one private university, two teachers' colleges, and a Polytechnic institution. The universities are located in Tehran (two), and in Shiraz, Meshed, Tabriz, Ahwaz and Isfahan.

The universities, too, are experiencing an expansionist surge.

In 1338-39 student numbers totalled 17,826 which compared with 12,962 students in 1336-37. This represents a 38% increase in two years, and an even greater rate of growth than that in primary and secondary education. Nearly three-quarters of the students were in the University of Tehran, as the following figures show:

No. of Students in Iranian Universities

University	Number
Tabriz	1,535
Meshed	929
Esfahan	762
Shiraz	1,158
Ahwaz	285
Total provincial....	4,669
Tehran	13,157
Grand total........	17,826

Tehran is thus not merely the oldest university, it is by far the strongest numerically. Its predominance over the other universities is increased by the fact that most of the leading officials of these institutions are resident in Tehran and teach at the University of Tehran.

Tehran predominates in yet another way. It is the only university offering a full range of courses. All the others offer instruction only in a limited number of fields. All institutions have faculties of medicine. Shiraz, Meshed and Tabriz have faculties of letters. Shiraz, Tabriz and Ahwaz teach agriculture. Pharmacy is taught in Isfahan and Tabriz. Theology is taught in Meshed. Science is taught in Shiraz

The proportion of women students is low. In Tehran in 1338-39 it was 15%. There is a marked tendency towards the study of non-technical subjects. Some 43% of the students are reading humanities. In Tehran a further 1,010 students are in the Faculty of Theology. This number and proportion of students on non-technical fields is unduly high in view of the needs of the country for technical specialists.

The universities have been poorly equipped and insufficiently financed. Their library facilities are inadequate and the students read insufficiently. Laboratory facilities are far short of a desirable standard. The most serious drawback is the absence of full-time teaching staff. The low level of salaries compels most university teachers to take up other income earning occupations. They cannot, therefore, spare sufficient time for research or for contact with their students.

In addition, there is a notable absence of the spirit of collaboration between the universities and between faculties within a single university. The result is wasteful duplication of effort, and lack of cooperation in achieving common ends.

2. Policy:

In the Third Plan it will be a major policy to concentrate on the improvement of quality in teaching and research rather than on the expansion of student numbers or the creation of new universities. Every effort will be made to improve the existing universities in terms of curriculum, staff, building, and equipment. The growing needs of the country for highly educated men and women, and the pressure of numbers coming through the primary and secondary schools, will eventually force expansion of the size of the university student body, and may perhaps require the creation of new universities. Policy during the Third Plan period will be to lay the foundation for such future expansion by changing over to full-time staffing, encouraging research, and improving libraries, laboratories and other facilities. Methods of teaching will be improved with a view to reducing the emphasis on repetitive learning and encouraging original thinking. Staff training methods will concentrate on identifying and giving experience to the promising young teacher.

Planning of university development will be facilitated by the creation of a coordinating body within the universities.

3. Objective:

The broad objectives of the universities during the Third Plan will be:

1. Improvement of the quality of university education and the expansion of scientific research in the universities.

2. Expansion and improvement of the technical, agricultural and medical faculties of the universities to meet the manpower needs of the country for highly trained specialists.

3. A better coordination between the faculties of each university and between all the universities of the country.

4. An attempt to bring the universities to the people by means of special programs.

To achieve these objectives the following steps will be taken:

1. Formation of an Iranian Universities' Co-ordinating Committee composed of representatives of each university, together with representatives of the Ministry of Education and Plan Organization. This committee will be the principal planning and co-ordinating body of the Iranian university system. Its function will be to prepare plans and make proposals for all aspects of university education.

The committee will consult regularly with the governing bodies of all the universities, and will submit annual and quinquennial plans to the government, based on those consultations, for the development of the universities and the necessary finance for that development.

Its task will be to foster close relationships between the universities. It will encourage the rationalization of functions between universities, so that each university will concentrate upon those subjects for which it is specially fitted. Duplication will be avoided in the teaching of subjects in which the need is limited or the skilled teachers are in short supply. It will encourage the exchange of teachers between institutions.

2. Appointment of full-time academic staff whose whole activities will be devoted to teaching and research.

3. Avoidance of duplication in the teaching of basic classes (foreign languages, basic science subjects, double provision of libraries) in the several faculties of each university, and the setting up of strong departments for the teaching of these basic subjects.

4. Continuous university-wide study of the teaching and instructional practices of each university.

It is of the utmost importance for the universities and the country that the present emphasis on rote memorization of notes or texts be replaced as rapidly as possible by more reading, discussion, writing and independent thought. A modern changing nation demands students who are taught to think, to search for knowledge, and to continue their education after graduation.

The present system of examination should be modified so as to encourage those students who have the ability and initiative to think and work independently.

5. Encouragement of research of all types.

The universities will prepare long-term research plans to be carried out during the Third Plan period and beyond. These programs will be prepared with the co-operation of industrial and technical organizations, and special emphasis will be placed on applied research.

6. Adjustment of the supply of university trained men and women to the manpower needs of the country.

A close relationship will be established between the universities and outside interests, including the Ministry of Labour, and large industrial and commercial organizations.

7. Establishment of a student personnel program.

This program will be designed to give service and guidance to the students concerning their academic and personal needs. Its activities will include granting of scholarships, provision of housing for students, health services for students, and academic counselling.

8. A staff training scheme for university teachers.

The universities will endeavour to meet their staff needs by means of special training schemes. They will recruit promising graduates as junior teachers, and after a few years' experience, if they prove to be good material they will be sent abroad for further training.

9. Full use of university facilities for public instruction.

Summer, evening and extension courses will be established for the benefit of the general public who are unable or do not wish to take full university courses. The universities will endeavour to integrate themselves into the lives of the ordinary citizens by organizing and bringing to the community programs which will interest and educate the citizens.

10. Revision of regulations concerning selection and promotion of faculty.

The object will be to allow promising, well-trained young faculty members to progress towards full professional rank in accordance with their teaching and research merit.

11. Refresher courses for university teaching and technical staff.

These will be undertaken periodically, say once every three years for each staff member, and held during the summer holidays, the object being to exchange the latest information on progress in the various fields of science.

12. Improvement and expansion of university publications.

Special attention will be given to publishing of research work.

13. Concentration in improvement of foreign language teaching and knowledge.

A good knowledge of at least one foreign language is essential to advanced study for all Iranian students. The universities will examine a number of alternative ways of ensuring that students from the beginning of their courses have this equipment. Intensive study in the first six months or year of university attendance, summer pressure courses before entering university, or even a special one-year preparatory course in foreign language will be examined. The Institute of Foreign Language in the University of Tehran will be developed as rapidly as possible to provide intensive language training for university students.

4. Allocations

Details follow concerning the individual faculties of the University of Tehran, and the individual provincial universities, together with the allocation for each.

Total allocation for the University of Tehran is Rls.1,847 million, and for the provincial universities Rls.2,163 million, making a grand total of Rls.4,010 million.

UNIVERSITY OF TEHRAN*

FACULTY OF MEDICINE

The Faculty of Medicine was designed for an annual intake of 100 students, but is taking three times this number. The great demand for training in this field coupled with the need of the country for more doctors and other medical experts has compelled the Faculty to raise the number of students substantially, though there has been little increase in facilities. At present the Faculty has 350 students in each year. One of the main deficiencies of the Faculty is the inadequacy of hospital beds at its disposal. It has about 2,100 hospital beds for training purposes.

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* Does not include the program of technical and agricultural faculties. These are discussed in the Manpower Plan Frame.

Objectives for the Third Plan

The main objective of the Medical Faculty will be to raise teaching standards and providing adequate facilities for training the present number of students. The annual intake of the Faculty will gradually decrease. The Faculty programs for training of nurse-aids, nurses, midwives, and laboratory technicians will be expanded substantially. Post-graduate specialized courses will be developed in order to provide specialized training course for a greater number of students. At present about one-third of Faculty graduates go to foreign countries for their specialized courses. The following funds have been tentatively allocated to this Faculty, but may be revised subject to the findings and subsequent changes in the Health Plan:

1. Completion of its existing buildings and improvement of hospitals.............	Rls.	60 mil.
2. Equipment................................	"	30 "
3. Employment of 100 teaching & technical staff (associate professors, assistants, technicians & nurses)	"	98 "
4. Establishment of medical experimental laboratories	"	60 "
5. Training of nurse-aids, laboratory technicians & specialized courses (tripling the present capacity)..........	"	60 "

6. Medical research (specific research programs will be prepared to be included in the Detailed Plan) ....Rls.20 mil.

Total . . . . .Rls.328 "

The Medical Faculty has made a proposal for constructing a 1,400-bed hospital. This question must be examined in drawing up the detail plan for Iran's health facilities.*

FACULTY OF SCIENCE

The Faculty of Science provides 3 years of undergraduate training in five branches: Chemistry, Physics, Mathematics, Biology and Geology.

In 1339 there were 1,006 students. The number of graduates was about 300. There are 3 institutes affiliated to this Faculty: Institute of Atomic Physics, Institute of Statistics and Institute of Geophysics.

Objectives for the Third Plan

A - The Faculty

The quality of training will be improved. Students will be required to do more laboratory work. No increase of the number of undergraduate students is recommended, since there are few employment opportunities except in the field of teaching. Graduate courses will be established for the competent students. The following funds are allocated:

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* Please see Health Plan-Frame

1. Construction of one additional floor on the existing building...........Rls.52 mil.

2. Completion of existing laboratories and establishment of new ones .... " 40 "

B - Institute of Statistics

General expansion of the Institute, training and recruitment of full-time teaching and technical staff, and research activities and expansion of the library .... " 10 "

C - Institute of Geophysics

Training and recruitment of technical staff, completion of the Magnetic Observatory, establishment of Seismological bases, establishment of a specialized course for discovery of minerals.......................... " 30 "

D - Institute of Atomic Physics

Training and recruitment of full-time technical staff, completion of the Amirabad building, establishment of a documentation center .... " 150 "

T o t a l . . . . .Rls282 mil.

Note: The Faculty of Science and its affiliated institutes will prepare a research program.

VETERINARY FACULTY

The annual intake is 50 students. The laboratories and clinics of the Faculty are not completed. Research activities are not carreid out.

Objectives for the Third Plan

The Faculty will double its present annual intake of students, start research and expand its services in the Third Plan. The following funds are recommended:

1.	Construction (completion of Animal Clinic in Vasfnar, establishment of small animal clinic and livestock institute in Aminabad, and completion of the Faculty Dissection Room)	Rls. 100 mil.
2.	Equipment	" 4 "
3.	Additional current costs and research activities (employment of technical and teaching staff and other expenses) . .	" 100 "
	Total	Rls.204 mil.

Note: The Faculty will prepare a research program.

FACULTY OF LETTERS

The Faculty of Letters with its affiliated institutes (Institute of Languages, Institute of Social Studies and Research and Institute of Archeology) had about 4,554 students and 900 graduates in 1339.

Objectives for the Third Plan

1.	Construction (for Institute of Social Studies & Research, and Institute of Foreign Languages)	Rls.50 mil.

2.	Equipment for the above	Rls. 4 mil.
3.	Employment of 30 lecturers on full-time basis	" 35 "
4.	Development of Institute of Foreign Languages, Socio-Economic Research, Studies and Research on Languages, History and Culture of Iran	" 36 "
	Total	Rls. 125 "

Since at present the standard of foreign language instruction is at a low level in the university, special attention will be given to developing the Institute of Foreign Languages, expanding its training activities to all university students. The Faculty of Letters has also an Institute for Geographical surveys and it is proposed that the Arid Zone Research Center should be integrated with this Institute.

FACULTY OF DENTISTRY

This Faculty admist 75 students per year. It is the only Dental Faculty in the country. In 1338 the Faculty established a two-year course for training nurses for dental clinics.

Objectives for the Third Plan

It has been proposed that the Faculty might double its present number of students by working a double shift and expand its nurse training program. A Faculty of Dentistry has also been proposed for the Meshed University. The final choice between the two alternatives will rest with the University Coordinating Committee, taking into consideration the recommendations made in the Health Program. The following funds are recommended:

1. Construction	Rls. 40 mil.
2. Equipment	" 5 "
3. Additional current costs (training & employment of new technical & teaching staff, others)	" 70 "
Total	Rls. 115 "

FACULTY OF PHARMACY

The Faculty provides a five-year course for its students. The annual intake is about 90 students.

Objectives for the Third Plan

The present five year course of training will be increased to 6 years and divided into two courses: a 3-year course for training pharmacists who will work in drug stores, and a three year specialized course for competent students to become specialists. Since the Faculty at present does not have a research institute, the establishment of such an institute is proposed.

The following funds are allocated to this Faculty:

1. Construction (for the Institute, library & amphitheatre)	Rls.33 mil.
2. Equipment for the Institute	" 20 "
3. Operational cost of the Institute	" 40 "
Total	Rls.93 mil.

FACULTY OF FINE ARTS

The Faculty of Fine Arts has three branches: Architecture, Sculpture and Painting. The present annual intake is 100 students and no increase is recommended. A sum of Rls.30 million is allocated to this Faculty for completion of the architectural workshops.

FACULTY OF LAW

This Faculty had 921 students in 1339. The Institute of Economic Research and the Institute of Public Administration, which are part of this Faculty, will be developed. Furthermore, a Department of Economics will be set up to provide specialized course in Economics both for undergraduate and graduate students A sum of Rls.30 million is allocated to this Faculty for the above objectives.

BREAKDOWN OF ALLOCATION TO THE UNIVERSITY OF TEHRAN FOR 1341-46

		Mil. Rls.
1.	Faculty of Medicine	328
2.	" of Science*	282
3.	" of Veterinary	204
4.	" of Letters*	125
5.	" of Dentistry	115
6.	" of Pharmacy	93
7.	" of Fine Arts	30
8.	Execution of law for full-time staff	330
9.	Students Welfare Program (housing, scholarship for competent students and housing for teaching staff)	200
10.	Establishment of Central Library and Documentations	100
11.	Faculty of Law (establishment of Department of Economics; assistance to the Institute of Economic Studies and Institute of Public Administration)	30
12.	The Iranian Universities Co-ordinating Committee	10
	Total	Rls. 1,847

* Includes the affiliated institutes.

PROVINCIAL UNIVERSITIES

1. Background Information

The five provincial universities are:

PROVINCIAL UNIVERSITIES: DETAILS

University	No. of Students	Details of Faculties	1339 Budget Rls.Mil.
Tabriz	1,535	Medicine, Pharmacy, Letters, Agriculture, Teacher Training College, Technical College	120
Ahwaz	285	Medicine, Agriculture	51
Mashad	929	Medicine, Theology, Letters	56
Esfahan	762	Medicine, Letters, Pharmacy	64
Shiraz	1,158	Medicine, Letters, Pharmacy Science	70
Total	4,669		361

Unlike the University of Tehran, none of these universities give a full range of courses. They can, therefore, be considered as only partially developed. Like the University of Tehran, they suffer a number of weaknesses, of which the outstanding is that they lack a full-time academic staff. They have an additional weakness: they are largely directed by men who live in Tehran and teach in the University there.

The provincial universities lack buildings and equipment as well as staff. In respect of few, if any of the characteristics of a good university can they be considered fully adequate.

2. Policy

The major policy is to concentrate on the development and improvement of the existing universities. No new universities are proposed, and we do not favour the creation of new faculties within the existing universities. The reasons for this policy are:

(a) the shortage of well-qualified teaching and technical staff in the existing universities; and

(b) the lack of basic physical facilities, and the resultant need for heavy investment to develop existing faculties during the Third Plan period.

All the efforts in the Third Plan will be directed to the improvement and development of the existing provincial university facilities. Priority in this respect will be given to the development of the medical and agricultural faculties. It is recognized that the working relationships between these faculties and foreign agencies (as in the case of the University of Tubingen for the Ahwaz Medical Faculty and the Near East Foundation in the case of the Ahwaz Agricultural Faculty) are of vital importance, and these relationships will be encouraged.

The most important case of development and improvement will be that of the University of Shiraz, which will be transformed into the Pahlavi University of Iran. This university will be organized according to the pattern of modern western universities. Details of the proposals for provincial universities are as follows:

UNIVERSITY OF AHWAZ

This University has two faculties: a Faculty of Medicine with an annual intake of 50 students, and a Faculty of Agriculture with an annual intake of 45 students. Both of these faculties, but especially agriculture, are deficient in staff, buildings and equipment. The objective for the Third Plan is to remedy these deficiencies and to double the annual intake of students for medicine.

The following funds are allocated to the Faculty of Medicine:*

	Rls. Mil.
1. Completion of Medical Faculty buildings & Gondi Shapoor Hospital..	60
2. Completion of medical laboratories.............................	5
3. Training and recruitment of full-time staff	50
4. Students' housing and scholarships...	3
5. Establishment of a training hospital	**
Total	118

---

* The program of the Agricultural Faculty is given in the Manpower Plan Frame.

** The cost of the training hospital is given in the Health Plan Frame.

UNIVERSITY OF TABRIZ

There are five faculties: 1. Medicine with an annual intake of 75 students 2. Pharmacy with 30 students a year 3. Agriculture with 30 students a year 4. Technical with 30 students and 5. Letters and Teacher Training College with about 500 students annually (day and evening classes). The staffing, buildings and equipment of the existing faculties will be completed during the Third Plan. The Teachers' Training College will be expanded at a more rapid rate to provide training in educational theory and teaching methods for those students proposing to teach. Furthermore, it is recommended that the Faculty of Pharmacy divide its training course into 1 - a three year course for training pharmacologists and 2 - a more specialized course for competent students to become specialists. Whether the specialized course should be given at Tabriz University or at the University of Tehran will be determined in the Iranian Universities' Co-ordinating Committee. The following funds are allocated for the Third Plan period.*

1. Completion of Medical Faculty building....	Rls. 40 mil.
2. Completion of the Medical Faculty 150-bed hospital..............................	Rls. 60 "
3. Equipment and completion of laboratories..	Rls. 50 "
4. Training and recruitment of full-time staff & expansion of the teachers college	Rls. 80 "
Total	Rls. 230 mil.

---

* The program of Technical and Agricultural Faculties are discussed in the Manpower Plan Frame.

UNIVERSITY OF MASHAD

There are three faculties: 1 - Faculty of Medicine with an annual intake of 80 students, 2 - Faculty of Letters with an annual intake of 300 for day and evening courses and 3- Faculty of Theology which takes about 50 students a year. The main objective for the Third Plan is to provide the necessary staff, buildings and equipment for the existing Faculties and to establish a Department of Education for training secondary school teachers. The Faculty of Medicine will be expanded to take 100 students annually. The following funds are allocated for the Third Plan period:

	Mil. Rls.
1 - Construction and equipment of Medical Faculty	200
2 - Completion of building and equipment of Medical Faculty Dispensary	25
3 - Students' Welfare Program (housing, scholarships, etc.)	20
4 - Additional current cost and training and recruitment of technical and teaching staff on full-time basis for the three faculties and establishment of a Department of Education	110
Total	355

Note: Construction of a training hospital and a nursing school are dealt with in the Health Plan Frame.

UNIVERSITY OF ISFAHAN

There are three faculties: 1) Faculty of Medicine with an annual intake of 60 students, 2) Faculty of Pharmacy with an annual intake of 25 students and 3) Faculty of Letters which takes about 250 students in day and evening classes. In the Third Plan these three faculties will be improved as to staff, building and equipment. Meanwhile a Department of Education for training secondary school teachers will be set up. The Faculty of Medicine will be developed to take 100 students per year and the Faculty of Pharmacy will be divided into two courses: 1) a three-year course for training pharmacists to work in drug stores and 2) a three-year course for training specialists. Whether the specialized course should be given at the Isfahan Faculty of Pharmacy or at Tehran University will be determined in the Iranian Universities' Co-ordinating Committee. The following funds are allocated to this University for the Third Plan period.

	Mil. Rls.
1 - Construction and equipment of Medical Faculty	200
2 - Completion of the Khorshid Hospital, the Medical Faculty Training Hospital...	50
3 - Construction and equipment of the Faculty of Pharmacy	80
4 - Students' Welfare Program (housing, scholarship, etc.)	20
5 - Additional current cost, training & recruitment of teaching & technical staff on the basis of full-time, & establishment of a Department of Education.......	110
Total....................	460

NOTE: Construction of Training Hospital & Nursing School are discussed in the Health Program.

UNIVERSITY OF SHIRAZ

There are four faculties: 1) Medicine, 2) Agriculture, 3) Science, (annual intake of each is about 40) and 4) Letters.

In 1338-39 there were about 1,160 students studying at this University.

The Shiraz University is to be transformed into a "large and distinguished" university to be known as the Pahlavi University of Iran. The University of Pennsylvania has made a report outlining the planning and development of the new university. It is proposed that the Pahlavi University include the following schools:

1. Liberal Arts & Sciences;
2. Agriculture;
3. Engineering; and
4. Medicine.

The cost of this project has been estimated at around $60 million for the first five years. As a tentative allocation a sum of one billion rials is alloted to finance a proportion of total cost of this University.

3. Allocations

Total allocations to the provincial universities amount to about Rls.2,163 million, made up as follows:

PROVINCIAL UNIVERSITIES: ALLOCATION*
THIRD PLAN, 1341-46

University	Allocation(Rls.Mil)
Ahwaz	118
Tabriz	230
Meshed	355
Esfahan	460
Pahlavi	1,000
Total	2,163

* Does not include costs of technical and agricultural colleges and training hospitals.

C. The National (Private) University of Tehran

There is no clear picture as yet concerning the future development of this University, or the part that the Government ought to play in its development and finance. No definite proposal is made here, therefore, but in principle some assistance is in mind, and a tentative allocation of Rls.100 million has been made.

SPECIAL SCHOOLS

Introduction

We believe that in the Third Plan some thought should be given to the education of handicapped children as well as to the re-education of maladjusted ones. By handicapped children we mean those who suffer from physical defects or are mentally retarded. By maladjusted children, we mean those with behaviour problems and difficult children. So far, the government has paid very little attention to this type of program, while we believe that with the existing trend of urbanization and westernization, we shall face seriously some of these problems, especially one of "difficult children" in the coming years.

Background Information

There has not been in the past enough attention paid to special education. One exception in this respect is the Baghcheban Training School for Deaf and Dumb children in Tehran. The founder Mr Baghcheban started his first experiments in 1927. But the school was first established in Tehran in 1933, with very few children. In 1339-40 there were some 103 deaf and dumb children from the age of 6 to 16 being trained in this school. The training method appears to be very useful and efficient. Half the total number of pupils (56) receive training free of charge the others pay 1,000 rials per month including school fees, travel expenses and lunches. There are 14 teachers in school, half of the transport charges are paid by the Ministry of Education; others are paid on a very limited low basis by the school itself. The school receives a small contribution from the Ministry of Education (Rls.15,000 per month for lunches) and the Society for the Protection of Deaf and Dumb children, (Red Lion & Sun). The school has insufficient rooms. There are some 12-14 children in each classroom, which is too much. It needs a 3-floor building at a cost of 5 million rls. It lacks also workshop equipments and some laboratory equipments.

It seems that there are some hundreds deaf and dumb children throughout the country, but without special enlarged facilities. The school cannot accept any more children. The existing building has been constructed in 1958 by Red Lion & Sun. The present building consists of an office, 10 small classrooms, a small workshop, a dining room and a kitchen.

The program of the school includes in addition to ordinary courses (reading, writing, speaking and other courses), some vocational training (tailoring, weaving, typing, fretwork, etc.) in order to find job for both female and male trainees who need to be employed.

Specialized teachers are among the most important needs of this institute. Furthermore, salaries are too low and does not attract well-qualified and specialized teachers.

Information Regarding School of Social Work

The School of Social work was created in October 1958, with the help and support of several governmental and non-governmental organizations. The Ministry of Education, the Ministry of Labor, the Ministry of Health, the Ministry of Justice, the Ministry of

Interior, the Ministry of Finance, the Plan Organization, the Higher Council of Social Welfare agencies, the Imperial Society for Social Services, the Pahlavi Foundation, and the NIOC.

The training course is two years and 20 social workers graduated this year. All of them were absorbed by different welfare institutions. But the Ministry of Education approved recently the addition of a third year class.

The three major purposes of this school are:

1) preparing students for social work practice in Iran.

2) establishing new professional social work services and stengthening existing social welfare aids and services at the request of ministries and different other governmental or non-governmental institutions.

3) broadening areas of knowledge related to social welfare through studies, based mostly on casework, in such areas as the characteristics of existing social problems in Iran, prevailing ways of dealing with such problems and the measurement of results. The school has worked very efficiently. It is then recommended to be strengthened and expanded further.

Objectives of the Third Plan in these Fields

Some of the measures to be taken by the government in this respect during the Third Plan are:

1. Establishment within the university, on a cross-faculty basis, of a special department, in cooperation with the Teacher Training College and Faculty of Letters, Section of Psychology and Education, and the Faculty of Medicine, for the training of educators for different institutions of maladjusted and handicapped children. The cooperation of the Ministry of Health, Department of Mental Health, would be of great value. A tentative allocation of one million rials is recommended.

2. Financial support to be given to two special education activities: one, that of Baghcheban's School for Deaf and Dumb children; and the other, that of the Imperial Organization of Social Services for the education of the blind according to the Braille method, a sum of Rls.5 million allocated to the School of Deaf and Dumb and Rls.1 million to Imperial Organization.

3. The training of multi-purpose social workers should receive support from the Government. We recommend a contribution to the Tehran Amoozeshgah for Social Work of Rls.42 million (see below). But we suggest that if the school is expanded, some of its graduates could be directed to bringing help to difficult children and to helping families in this respect.

4. We recommend also a pilot project: that of the creation of a child psycho-medical clinic to examine and make diagnosis of the special cases presented (crippled, mentally retarded, sub-normal and maladjusted). This project could be a joint effort of the Ministry of Health, Department of Mental Health, and the Faculty of Medicine, to be located as an annex to the Amoozeshgah for social work. The students of the Amoozeshgah could work and gain practical experience in this special field and there would be no need for new construction, if the construction already in hand for the Amoozeshgah is going to be completed. We propose an allocation of two million rials to this project for the Third Plan.

TABLE OF ALLOCATION

	Rls.Mil.
Training of educators for handicapped and maladjusted children	1
Completion of construction and equipment of Baghcheban's School for Deaf & Dumb	5
Contribution to Imperial Organization of Social Services and (Society for Protection of the Blinds).	1
Amoozeshgah of Social Service, completion of the building and current cost	41
Establishment of Child Psycho-Medical Clinic . . .	2
Total	50

SCHOOL TEXTBOOKS, SCHOOL & PUBLIC LIBRARIES

In recent years, successful efforts have been made to revise primary school textbooks; but these efforts have not yet reached the secondary level. In the secondary schools, many different texts are used in a given subject. They are generally prepared by the teachers themselves; while these texts correspond to the outline of the programme decided by the Ministry itself, they are not always prepared with due regard to modern teaching methods, which try to stimulate curiosity and enthusiasm in the students' minds and encourage them to think and solve problems. In attempting to revise or standardize secondary school textbooks, the Ministry of Education finds itself facing the opposition of interested groups.

The newly reorganized Department of Books & Library in the Ministry of Education should study, with a committee of experts, measures to be taken improve the present textbook situation. The committee should investigate-

(a) whether the present textbooks are adequate;

(b) whether the Ministry should standardize texts, or leave it to the teachers to prepare texts freely, reserving to itself only the right of approving good quality texts;

(c) if the texts are to be standardized, the persons and methods to be employed in standardizing, and the method of compensation for those teachers who lose as a result of standardization; &

d) how to revise textbooks from time to time on the basis of experience gained.

No financial allocation is suggested for this activity because the textbook publication is a self-liquidating project. However, we regard the textbook program as an important one if the other objectives of the Third Plan in education are to be achieved.

The above mentioned Department in the Ministry of Education has another program - expansion of school libraries and creation of public libraries in all cities.

As far as the school library is concerned, we think that the Education Shahrestan Committee, composed of the representatives of local people and also of the representatives of different governmental organization, as well as the Parents Teachers' Association, should help in the expansion of the school libraries.

The Ministry of Education is now studying the minimum standard of a school library to be taken into account in the future. Local help is also needed for the creation in each city of a public library. In large cities, the Public Library must have branches in different districts of the city. Books available in each district, will correspond to the taste and mentality of the people there. Some mobile book stores will serve the surrounding areas. Because of limited resources, we cannot in the short run establish a public library in each town or even city at the minimum standard requirement (for e.g. $1.50 expenses per capita of population in each locality of

America). So, we can only propose a government contribution of the order of Rls.100 million to be added to contributions made by people and local authorities themselves. The latter experience has been done already and the city of Ahwaz, for example, has offered Rls.500,000 in order to have its own Public Library.

PREPARATORY MEASURES

The Education Program outlined in this Plan-Frame sets ambitious targets. To realize them will take a fully developed effort through the five and a half years of the Third Plan period. To avoid loss of time during the Plan, certain interim measures must be undertaken in the balance of 1340 and in 1341 in preparation of the programs which must begin at full speed in mid-1341 if the targets are to be reached.

These measures are:

1. Expansion of teacher training programs for primary, secondary and vocational schools. The one year teacher training program for primary schools should train at least 2,500 teachers in 1340-1341.

2. Establishment of a strong high-level organization in the Ministry of Education with co-ordinating and co-operating functions over the execution of the mass adult literacy campaign. Preparatory steps for the illiteracy campaign, including a request to UNESCO to provide a resident expert for planning the program and advising on textbook preparation and special teacher training program.

3. Appointment of an Expert Commission on Education which should submit its report before the Third Plan starts. Its terms of reference should enable it to evaluate every aspects of Iranian education and to suggest remedies and changes where faults are found.

4. Appointment of an expert committee to report on ways and means of improving the present inadequate textbooks.

5. Establishment of a Planning and Evaluation Department in the Ministry of Education with the functions of collection and analysis of educational statistics, projection of future educational needs, estimate of financial requirements, general research and evaluation of educational matters; and advice to the Minister on co-ordination of Ministry's programs.

6. Finally, the Universities' Co-ordinating Committee should come into existence to plan and co-ordinate the work and the finance of the universities.

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THIRD PLAN, 1341-1346

HEALTH
PLAN FRAME

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PREFACE

The program which appears in this Plan Frame is remarkable because it gives direct evidence of a growth in planning consciousness which could hardly have been visualized when the first Third Plan discussions between officials of the Ministry and of Plan Organization began. Ministry of Health and Plan Organization relationships have been close for a number of years, because Health has been one of the major avenues of Plan Organization expenditure. But neither on the side of Plan Organization nor of the Ministry was there evident a full understanding of the need for perspective planning of the whole health effort for many years ahead. It is to the credit of both sides that the conception has emerged as the discussions have gone on. However, of all the social services Health is the least a government monoply; and for this we should rejoice. Many private, charitable and autonomous publicly supported organizations flourish in this field. The debit side of this is much overlapping, lack of coordination and consequent waste of money and effort, which a country like Iran, short of trained people and facilities alike, cannot afford.

We have had the opportunity of discussing the needs and aspirations of the major non-government bodies in the health field We hope that this plan will assist to help the people of Iran. But it calls for so much from them in the way of new functions and new efforts - after all, it represents probably the greatest change in functions since the Ministry was constituted - that the need for coordination becomes greater than ever. The proposal for a Royal Council for Health springs from the realization of that need. The Council would give real representation to all interests in the health field. The obstacle in the way of the effectiveness of this council can be surmounted with better understanding and mutual cooperation.

A word about style: This document may give the impression that decisions have been taken which are still open to discussions. This is still a draft. Decisions are to be made by the Council of Ministers.

The history of this draft is as follows:

After the initial discussions with High Ministry officials, the departmental heads of the Ministry gave us full assistance and information about all their activities. Discussions were held with them and the Planning Committee of the Ministry. On the basis of this discussion the Economic Division of the Plan Organization prepared a first draft as an internal document. Meantime a Planning and Evaluation Office was established in the Ministry of Health. The Minister of Health then asked his USOM adviser Dr. Samuel Kirkwood to take responsibility for the preparation of the Plan. The first draft was supplied to Dr. Kirkwood, and with the very full cooperation of the Ministry officials he prepared a plan for the Minister's consideration. The new draft was then closely examined by the Ministry of Health authorities and by other agencies undertaking health work. A number of revisions have been introduced in the programmes and this process might continue as the Health authorities of our country become more plan conscious. Hence the need for a flexible plan. Though this plan manifests the close degree of collaboration and trust between the Health Ministry and the Plan Organization at all stages of the planning process yet in some sub-sectors a few programmes have still to be finalized. The essence of this programme is coordination and this can be further improved. We have recommended that the Planning Committee collaborate with other departments to bring about this coordination during the interim period.

To Dr. Kirkwood and his staff we would like to pay a very high tribute for the devotion, hardwork and technical competence shown in this plan. We owe a further debt of gratitude to Dr. S. Mofidi,head of the Institute of Malariology and Parasitology of the University of Tehran who provided the greatest part of the introductory material and gave his unstinted assistance for preparing this Plan. We are also indebted to Dr. Sarukhanian of the Public Health Department for his close cooperation. Last but not least is the credit that goes to the Public Health Department of Plan Organization for their participation in the planning process. Apart from these the large number of people and agencies which actively cooperated with us in preparing the Health Programme makes it a difficult task to make individual acknowledgements.

The other agencies such as the Red Lion and Sun, the Imperial Social Services Organization, the Mother and Children Protection Bongah lent us their full support at all levels.

The activities and programmes of these agencies had to be taken into account in the Third Development Plan of Iran if the programme was to be an "all round, national, comprehensive plan". Given the shortage of time it was not possible to hold meetings with all agencies undertaking health activities (about 30) but those whose activities were on countrywide scale have been contacted for preparing this plan.

Shapour Rassekh

BASIC ASSUMPTIONS IN ESTIMATING

Throughout this document reference is made to Development and Non-Development Expenditure. Development expenditure is taken for this purpose to be virtually all new expenditure, both for running expenses and capital, over and above that spent in the previous period. For Third Plan purposes development expenditure has been taken as expenditure over and above that current, both for capital and running expenses, in the year 1341-1346. To the extent that amounts required in the interim period 1340-41 are not provided, they have to be provided in the Plan period; and this will either increase the cost of the Plan or cause the Plan to fall short of accomplishment.

Funds paid during the Second Plan period by Plan Organization, which will have to be continued at least on that level during the Third Plan period, like B.C.G. vaccination, or contributions to operations of any nature, are treated as development funds for the Third Plan period.

KEY TO COST ESTIMATES

Throughout the program there will be found cost estimates with recurring formulae and standard abbreviations. The following is an explanation of the basis of these:

(a) Formulae:

6.62: This is a factor giving the compound rate for 5½ year at 5% per annum increase.

0.9: This is a reduction factor for annual expenditure, because it is found that only about 90% of the funds budgeted each year to any activity are spent.

1.6: This is a calculation of 1½ years' expenditure, plus an upward adjustment factor for increase of costs (salaries, etc.) over the period.

2/3: This is a reversal factor to determine costs for one year after determining the total costs for the period 1340-41 up to the beginning of the Third Plan (1½ years).

(b) Abbreviations and Standard Rates:

30 = Dep Dir: Deputy Director receiving 30,000 rials per month
20 = Div Dir: Divisional Director " 20,000 " " "
15 = Sect Chief: Section Chief " 15,000 " " "
10 = Worker, prof: Professional worker receiving 10,000 rials per month
9 = Aid: e.g. Sanitarian aid, receiving 9,000 rls. per month
8 = Secy: Secretary receiving Rls.8,000 per month
7 = Typist receiving Rls.7,000 per month.

HEALTH

Background Information

Few fully accurate facts are known about Iran's health, but the general situation is clear. The conditions are not very favorable for individual health, if no worse than in surrounding countries. But a fair start has been made towards the provision of a good health service, and a firm base has been laid down for future development.

Life in Iran is short; the life expectancy from birth is 35 to 40 years, at least 25 years less than in the healthier countries. Many infants die prematurely; infantile mortality is at least 200 per 1,000 live births. Out of approximately a million births a year, only about 600,000 survive the period of early childhood. Half of all deaths occur before the age of five. Maternal mortality is high. Crippling and blinding conditions are widespread, gastric diseases are prevalent, and contribute much to the shortness of life. Tuberculosis, venereal disease, trachoma and other diseases are common. Outside the big cities little treatment can yet be given for cancer and heart disease. The ordinary people do not know much about the causes of disease, and by their habits add much to the dangers of the environment.

On the credit side, it would be wrong to conclude from this rough summary that conditions are desperate, or that no progress has been made. Cholera and plague are almost unknown, and poliomyelitis is not a menace. Smallpox, very common only a

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few years ago, has been brought well under control. While malaria remains in many areas, much progress has been made, especially in the north. General mortality is undoubtedly falling.

The health of a people is heavily influenced by their physical environment and their habits of living. From a description of present-day conditions in Iran it will be possible to see more clearly the nature of the health problems of the country.

Iran is not a densely populated country, and the population does not press very heavily on resources. Three-quarters of the people live in rural areas and their lives are conditioned to a greater or less degree by the agricultural environment. The major influence on health is the great shortage of water in many areas. The absence of evenly distributed continuously-flowing sources of water, as well as the necessity for daily care and grazing of animals have created under the geographical and climatological topography of Iran (temperature, atmosphere and precipitation, etc.), particular life habits and socio-economic conditions in the rural areas.

The country can be divided for health purposes into five categories:

i) Caspian area;
ii) high plateau;
iii) Khuzistan alluvial plain and Persian Gulf littorial areas;
iv) tribal areas, covering parts of (ii) and (iii); and
v) urban life.

From a landscape ecology and epidemiological point of view the first three areas are favourable to the prevalence of certain diseases - Hookworm in the Caspian Region, Schistosomiasis in Khuzistan, Guinea Worm in the southern part of Fars, etc. At the same time certain areas are unfavorable to the expansion of diseases prevalent in other regions - for example, the low incidence of intestinal parasites in Southern Kerman and Baluchistan. The distribution of Arthropod (insect) vectors and many important diseases transmitted by them follows the same pattern.

In rural areas to the background of landscape ecology the following factors are added: poor communications and roads, the close association of man with the farm, pasture and domestic animals, scarcity of water, illiteracy and deficient health education, backward social habits and superstitions, and a hard life for securing food and income which when obtained often prove both mediocre and insufficient - this because of the backwardness of agriculture and exhaustion of the land, the erosion, absence of fertilizers, use of animal manure for fuel, absence of wood over a large part of the country, non-utilization of oil products, difficulties in preservation of foodstuffs, genetically deteriorated livestock, and so on.

These influences tend to create isolated communities with limited sources of water, and with an average population of between 100 and 200. Although the centripetal action of urban life and industrialization has absorbed some part of the village community, the normal growth of population, helped by the improvement of health conditions, has compensated for this leakage so that rural communities seem to be remaining stable, at least in terms of numbers and physical distribution. As for the tribal people, they move by groups and are exposed to similar conditions to the villagers, with this difference that they enjoy the best climatic conditions of two areas, their summer and winter quarters, and avoid the unsuitable parts of both.

Coming to specific health conditions, a number of factors tend to increase the chances of miscarriage, and high infant mortality at birth or under one month - the custom of marrying young in rural areas (average age for boys 18 and for girls 15), the deficient nutrition of the pregnant mother, absence of prenatal care, need of active participation by the mothers in hard daily work (household, milking of cattle, baking, cooking, etc.) and finally the absence of medical or midwifery care during the childbirth. There is as yet no general figure for infantile mortality.

In addition to nutritional deficiencies, the Iranian infant is exposed during its first years of life to an unhealthy environment containing numbers of viral, bacterial, parasitic and fungal agents causing gastro-intestinal, respiratory, infectious, parasitic and nutritional diseases. In Tehran city in 1955, 37.9% of all deaths occurring were infants under one year, and 51.7% occurred in children under 5 years of age. In general in Iran deaths occurring under 5 years of age constitute about 50% of deaths at all ages. The five main causes of deaths among children under five in Tehran in 1955 were:

Gastro-intestinal	40.8%
Infectious & Parasitic	21.7%
Accidents	19.9%
Nutritional	11.7%
Allergic	5.7%

Medical care is not available for a large proportion of the population. Even if the school medical service were covering all school children, too many of them do not go to school and therefore are not protected. The concentration of the medical profession in the urban areas and especially in Tehran increases the relative scarcity of local medical services in the rural areas; and the absence of roads in these areas reduces the value of existing medical units to focal services or the communities living in the vicinity of these centers.

Of the 19,590 hospital beds (not a discreditable number) in total 8,143 are in Tehran Shahrestan and another 6,000 in important urban centers.

There is insufficient information to permit an accurate knowledge about major health problems and their specific epidemiology. But sample surveys conducted in various parts of the country, and the analysis of reported and registered deaths show that the rural population and to a certain degree the urban population (or at least those living in slum and suburban areas) are exposed to an unsanitary environment. Here the child through his early years is exposed to various health hazards due to the absence of sufficient water, deficient health education and personal hygiene, the solid establishment of all routes for the transmission of pathogenic organisms through water, food, air, contacts with men and animals, arthropod vectors, deficient nutrition and food sanitation, regular infestation of the environment by human discharges, refuse and garbage, etc. All these things together take a heavy toll, particularly in the early part of life, from birth to five years of age, and they also greatly reduce the productive potentials in following years.

Only 4% of the population survive all these health hazards and reach old age. These die of organic deficiency diseases (cardio-vascular, cerebral, nephritic, &c) hyperplasia (cancer, &c) and chronic geriatic diseases coupled with pulmonary or urinary infections.

Although Iran's health statistics are neither entirely reliable nor comprehensive, some figures may be taken as indicative. Amongst the diseases spread by fecal discharge the morbidity rates in 1957 per 100 thousand were: Typhoid 25.7, Dysentery 49.6; while Hook Worm in the Caspian region rises as high as 85% infection rate, and concealed Poliomyelitis is present throughout the population. Amongst diseases spread largely from the mouth and nose, the morbidity rate per 100 thousand in 1957 was small pox 8.08, measles 49.68, diphtheria 12.61, whooping cough 47.87 and tuberculosis 2,000 in some urban areas.

Amongst diseases spread by genital contact the infection rate of syphilis was 14%, and bejel 15-30% in Dashte Mishan, while the gonorrhea rate was given at 2%, an obvious understatement.* Amongst diseases caused by other types of contacts there were 3,000 cases of leprosy in the country and the trachoma infection rate rose as high as three-quarters of the population in the southern zone, with somewhat lower figures in the northern and plateau zones. Amongst arthropod (insect) borne diseases the estimated morbidity per 100 thousand in 1957 for malaria in the northern region, which has been cleared, was only 150, but 30,000 per 100,000 in the southern region. Plague hardly appears.

Amongst diseases spread largely by contact with animals or other extra human-sources, there were 2,326 cases of anthrax recorded between 1955-59.

Coming to nutrition and deficiency diseases, there appears to be a general shortage of eggs, milk, meat, green vegetables and fruit amongst the population, and particularly amongst children in their formative years. Surveys among schoolchildren in seven geographical areas in 1952, detected high prevalence of Riboflavin deficiency amongst two-thirds to the whole of particular group examined. Riboflavin deficiency is due to lack of intake of eggs, milk, meat and glandular organs and green leafy vegetables.

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* Due to self-treatment and non-reporting.

Vitamin A deficiency is also highly prevalent, and many children have thickened conjunctivae in consequence.

General iron deficiency (causing anemia), niacin deficiency, and of most importance, the long time deprivation of high quality protein, completes the deficiency picture of Iran.

Most of the endemic diseases have existed for centuries and have established a solid and balanced host-parasite relationship. Any change or breakage of this balance will produce hazardous results, unless it is done according to a properly designed program with particular emphasis on continuous action and consolidation of results obtained. Otherwise it is possible to do great harm by protecting certain portions of the population (particularly infants, and children) from natural exposure to the diseases in the environment, only to leave them prone to the disease at a later stage with consequently greater effects in sickness or death.

Nature of the Attack on Ill-health

How has Iran addressed itself to the problems of curing and preventing ill-health? As in other countries, a mixture of private and government activity has been used. Until the present century there were almost no health services in the country, and the picture of disease incidence was that common to countries in the Middle East - high infant mortality, high prevalence of malaria and gastro-intestinal diseases, general proneness to epidemic diseases, low expectation of life due to these causes and to deficiency diseases and their consequences, wide prevalence of conditions leading to the crippling and blinding of the population. The absence of a pure water supply and the ignorance of elementary hygiene created maximum favorable conditions for the propagation of disease.

In the present century the foundations of a public health service have been laid, curative services through a hospital system have been provided, medical schools have been set up for the training of doctors, many students have gone abroad and have trained as doctors, dentists, pharmacists and other specialists, nursing schools have been established. The tempo was, however, relatively slow until the 1950's, when a marked change occurred. With the commencement of the First Plan the Plan Organization undertook public health activities on a small-scale. Until 1952 the Ministry of Health functioned for the main purpose of providing hospital care and dispensary treatment to the people of Iran, free to all who presented themselves, to the extent that facilities were available. However, it was with the assistance of the USOM that Public Health was introduced as a function of the Ministry in 1952 and at the same time a program of construction for hospital and health facilities was begun in utilization of Plan Organization funds. Since then successful campaigns have been run against the major epidemic scourges, a diversified health service has been developed, efforts have been made to improve the quality and quantity of water supply, and substantial progress has been made in consequence.

The Ministry of Health is in general charge of the organization of health services in the country. It has not, however, been able to coordinate all health services, and development has been to a large degree unplanned. In addition to the Ministry of Health there are other Government bodies providing health services, such as the Workers' Social Insurance Organization, Railways Health Department, health departments of the municipalities, police, gendarmerie and military health facilities, School Medical Service, and the health services of indi-vidual Ministries for their own employees. Outside the government there exist three large charitable organizations, each receiving some degree of public support; the Red Lion and Sun Society (Anjomane Sheer-o-Khorshide Sorkh), the Imperial Social Service Organization (Sazmane Shahanshahi-e-Khedamate Ejtemai), and the Mothers' and Children Protection Bongah (Bongahe Hemayate Madaran va Nauzadegan); & the universities also provide hospital services.

The Red Lion and Sun Society began its activities primarily to combat disasters, but it has spread to a wide variety of charitable and health fields. It conducts hospitals, clinics, orphanages and nurse training facilities. It is a recognized member of the Red Cross International Organization.

The main program of the Imperial Social Service Organization is the construction of dispensaries in geographically remote regions. It also conducts a few hospitals and has one of the largest nursing schools.

The Mothers' and Children Protection Bongah, as its name indicates, primarily functions to assist needy expectant mothers and children. It conducts maternity wards and pre-natal center.

Activities During the Second Plan

In the Second Plan the health services have taken as their first objective the wiping out of the killing and weakening endemic diseases, and some excellent progress has been made with the aid of spraying and vaccination and general measures of hygiene throughout the country. In malaria about two-thirds of the country has been almost cleared of the disease, and has entered the last year of attack or early years of consolidation; the remaining one-third is proving much harder to control.

But already the effects on the national death rate and the ability of the people to work and enjoy life have been marked. The long established disease of smallpox is already on the way to total control, provided that vaccination and quarantine measures are kept up. Plan Organization has been assisting in a substantial hospital and sanatorium construction program. Some new services have begun, such as Medical Social Service, Nutrition and Health Education.

Defects in the Present System

The major shortcoming of the Iranian health system, of course, that it is too small for the task it has to perform. It does not yet reach sufficient people. It is too concentrated in the towns, especially in Tehran, and people in remote villages do not as yet have anything like adequate health coverage.

To the defects of inadequate size and maldistribution of personnel and facilities must be added the lack of planning and lack of coordination.

The most notable feature about health services in this country so far has been their piecemeal development, with little apparent priority or plan. Although the Ministry of Health is in nominal charge of the health effort, it has not conceived itself as the central planning authority in the country, nor has it gained a high prestige with the numerous public, private and semi-private health organizations working in the field.

There is no supreme health planning and coordinating body in the country, and as a consequence there is a lack of direction in the work undertaken, a tendency to duplication, and an absence of planning and priorities throughout the whole program.

One of the most difficult features is the excessive attractiveness of the capital city of Tehran. The fact that medical facilities are better in the capital, the more modern living conditions to be found there, and the reluctance of young doctors to go to remote rural areas where living conditions are bad, medical facilities are poor and the chances of keeping up-to-date in their work are not good, combine to cause a scarcity of doctors in the country and a relative surplus in Tehran. Of the 4,358 physicians and surgeons listed in October 1958, 1,673 were in Tehran province. Thus although Tehran has about 10% of the country's population it has over a quarter of the country's doctors. Similarly doctors tend to cluster in the ostan capitals and to avoid the small towns and villages. The legal provisions that young doctors must spend a period outside Tehran is unpopular. One result of the overcrowding in Tehran is that there is one doctor to less than 1,200 persons, a very respectable figure, as against only one doctor to every 4,900 people throughout the country, a much worse figure; but not unnaturally doctors in Tehran find it hard to make a living and appear to be underemployed. The poor are unable to afford the services of a doctor, and the doctors in their turn cannot, in the existing circumstances, afford to provide services to the poor.

Trained personnel, except physicians, pharmacists and midwives, have not been available to hospitals; pathologists, radiologists and other specialists are not available except in a few hospitals located in Shiraz and Tehran. Medical care is available only on a part time basis. Acute diseases are difficult to hospitalize. Ready emergency treatment and hospitalization is not available in the average hospital.

Construction of new and remodelling of old facilities is often difficult, taking from 5 to 15 years to accomplish, and then may suffer from:

1. Inadequate structural designs and equipment layouts;

2. Inadequate working drawings for plumbing, electrical and equipment installations;

3. Contractual bidding on inadequate designs permitting a wide range of quality and inadequate control of the finished products as well as increased cost.

In the hospitals supply and control of medicine is incomplete. There is no provision for the employment of specialized personnel - dietitians, record librarians, maintenance, house-keeping and other management personnel. For these types there are no national or local recruitment training programs except at Namazi Hospital in Shiraz. Too few administrators will delegate responsibility and none has the authority necessary for the job at hand. Existing civil employment laws regarding employment, salary and retirement are a definite deterrent to permanent employment of the best trained, dedicated persons. Lack of planning and cooperative organization for service causes great duplication of effort. Budgeting is often not realistic and cannot be based on efficient accounting practices.

Of the remaining defects the most outstanding is the shortage of nurses and the absence of good equipment in the hospitals. The shortage of nurses is so grave that it constitutes a major bottleneck in the development of the hospital program. The shortage is equally severe for fully trained graduate nurses and for nurse aids. As for equipment, many hospitals are so ill-equipped that it is obviously necessary to bring them up to standard before new hospital construction is undertaken.

Finally, there is a major gap in the absence of good local health services of all kinds. Municipal health services are poor or absent, and the clinics are few and far between, so that both the town-dweller and the villager suffer from avoidable health troubles.

POLICY

1. The major policy during the Third Plan is to develop an integrated health service under the guidance of a Royal Committee for Health, and to undertake, under that guidance, a 20-year health plan.

2. The aim of the plan will be to develop facilities which will serve the health needs of Iran and provide preventive disease services and needed medical care effectively and efficiently through a planned standardization licensing, survey and construction program.

3. The Ministry of Health will be the legal coordinating and standardizing agency for all health services and programs in Iran;

4. The Ministry of Health will become a programming, planning and standards-developing agency rather than an operating agency for hospitals; as far as possible operation will be a local responsibility;

5. The Ministry of Health will cease to operate hospitals, except certain specialized hospitals, and will pass the responsibility to the Red Lion and Sun Society, the medical schools or other appropriate bodies. The specialized areas will be T.B., mental hospitals, leprosaria and certain large hospitals in Tehran and ostan capitals.

6. The prosecution of the great campaigns against the endemic diseases will be continued, with a view to their full control.

7. Training activities will be intensified, especially for nurses and health technicians.

8. Assignment of specific areas of activities - each agency will be assigned the performance of the function for which it is best suited.

9. The long term objective of the Workers' Social Insurance Organization will be to concentrate on insurance aspects of its

work, and it will eventually cease to operate hospitals and other health facilities.

10. Hospital construction will be geared closely to the availability of trained stafff.

11. At university level the objective will be to improve quality of graduates and undertake research rather than to increase the number of graduates.

12. The Imperial Organization for Social Service will be responsible for operating separate dispensaries.

13. The environmental sanitation service, which has special significance for people in rural areas will be one of the major areas of activities during the Third Plan.

14. In the program of oversight by the Ministry, education and consultation rather than policing methods will prevail, but the Ministry's work will have the force of law in regard to minimum public health and safety standards. The programs of all associated ministries and agencies will be agreed before projects are confirmed. The Royal Council for Health will approve new programs, and no new construction or remodelling of health facilities will be permitted without the approval of the Ministry of Health and Royal Council. The object will be to bring every person in Iran within 20 kilometers of basic health facilities.

Four types of general health facility will be developed to provide comprehensive health care and service.

Health Center:	Hospital Out-patient Department Community Health Service
Health Clinic:	Emergency Beds Out-patient Department Community Health Service
Health Station:	Emergency Beds Dispensary Community Health Service
Health Office:	Administration Technical Personnel Technical Facilities

in which:

The Hospital	provides curative in-patient services
The Emergency Beds	provide care for emergencies, non-transportable to hospitals, and for short observation
The Out-patient Department	provides curative ambulatory care
The Dispensary	provides medicines and minimum ambulatory care
The Community Health Service	provides usual preventive, home visiting, and maternity services
The Health Office	provides coordinating administrative services, technical support.

Specialized health facilities will be developed under the Ministry of Health to provide care for the groups needing particular attention:

Tuberculosis	It is estimated that 4,000 sanitarium beds will provide needed hospitalization with the reorganization of the ambulatory treatment, case-finding, and the extension of tuberculosis service throughout all of the general health clinics and stations.
Mental Health	It is estimated that approximately 6 hospitals with a total of approximately 4,000 beds will provide needed hospitalization, assuming sufficient development of ambulatory treatment through the general health facilities.
Leprosy	The present 2 sanatoria should be sufficient with the expanded village facilities and the use of case-finding and treatment through the general health facilities.
Research	Although research should be a part of every program and every facility, one research center should be developed where the studies can be concentrated.
Rehabilitation	Again, this should become a part of every health facility, but in the development stage in Iran of this approach a principal center should be developed.

Certain main hospitals in the six teaching university centers should be under the charge of the universities and operated as teaching hospitals.

Based upon the standards and the requirements set forth in the tables which follow, these health facilities will be distributed as follows:

Tehran	General Health Centers Specialized Health Facilities National Health Offices

Tehran will remain the principal health center where policies are established and the general programs developed. Operation of these programs must be decentralized, however. It will be the final resort of patients needing highly specialized care.

Ostan Capitals	General Health Centers Some Specialized Health Facilities Ostan Health Offices

The Ostan Capital will be the center for the operation of the health programs. Supervision and maintenance of standards will be centered in the Ostan Health Office, but the actual operation of the health service is the charge of the health facilities themselves. The five provincial universities will naturally furnish some of the more specialized services in addition to their teaching responsibilities.

Shahrestan Centers	General Health Centers Shahrestan Health Offices

The Shahrestan Center will be the location of the most peripheral of the actual hospital facilities. The Health Center for the Shahrestan is somewhat over-staffed for the shahrestan's own population. This is done with purpose to enable the Center to provide technical support to the Bakhsh Centers and to act, with a small augmentation, as the Shahrestan Health Office.

Bakhsh Center	General Health Clinic

The Bakhsh Center, which is a geographic point, not the political subdivision, provides an integrated service for the rural areas. It is here that the rural service begins. The Clinic is over-staffed in order to provide technical support on a mobile basis for the Dehestan Stations. It has a small hospitalization capability for emergency and short term patients. However, the emergency beds of the Clinic plus those of the Health Stations within the Bakhsh area furnish sufficient beds to meet the rural standard of 0.5/1000 population. A rather large complement of environmental sanitation personnel is provided in order to meet the fundamental need of improved personal and home hygiene. In this area the midwifery service will be largely supervisory, for most of the deliveries will be attended by untrained midwives.

Dehestan Center General Health Station

The Dehestan Center is also a geographical point which is the center for a comprehensive health service for the final periphery of the rural areas. It has a minimum staff, and relies on technical support from the Bakhsh Center. It has a small hospitalization component of three beds. The physician assigned to the Health Stations will necessarily be young and may well be a graduate medical student who has served his general internship and may take this as his first step in meeting the requirement that he serve first in the Ostans before further work in the centers or Tehran. It is expected that there will be at least one untrained midwife in each village. It is possible that she can be used in a broader capacity to serve as a general local health agent. Close supervision is possible through the assignment to the Station of a behyar and a behyar midwife.

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Based on the four types of general health facilities outlined above, the table on the following page represents schematically the various types of standard building which will be erected in the appropriate place as and when facilities of this nature are required. The table does not represent a commitment to build any or all of these in the Third Plan period, but lays down the standard type of facility which will be erected in this and future plan periods.

HEALTH SERVICE AREAS FOR IRAN BASED ON REGIONAL PLANNING MINISTRY OF HEALTH FACILITIES FOR PREVENTIVE & CURATIVE MEDICINE SHOWING VARIOUS TYPES OF STANDARD BUILDINGS

Political subdivision and population	Facilities for preventive medicine	Facilities for curative medicine
OSTAN Provincial Capital	BLDG. I Large Health Center	BLDG. II Large Hospitals 90-120 beds
SHAHRESTAN County of 50,000 or more population	BLDG. III Medium Health Center	BLDG. II Medium Hospital 60 beds
SMALL SHAHRESTAN OR LARGE BAKHSH Township of 20,000 to 50,000 population	BLDG. IV Small Health Center combined with Small Hospital 25-40 beds	
SHAHRESTAN'S CENTER OR SMALL BAKHSH Commune of 20,000 or less population	BLDG. V Small Health Center combined with Out-Patient Dispensary	
DEHESTAN Village		BLDG. VI Rural Dispensary
		BLDG. VII TB Sanatoria
		BLDG. VIII Mental Hospital
		BLDG. IX Leprosaria
		BLDG. X Nurses School
	BLDG. XI Quarantine Station	
	BLDG. XII Institute of Hygiene	

ROYAL COUNCIL FOR HEALTH

The Royal Council for Health will be the official body through which coordination of health work in Iran is attained. The Council will include in its membership representation of all agencies doing health work in Iran, and will have official responsibility in planning and authorization. It will operate in close association especially with the Ministry of Health and the Plan Organization. The Council will act as the principal advisory body to the Minister of Health and his Ministry. The exact person to whom it will be responsible - Prime Minister, Minister of Health, etc. - remains to be determined. It will include all health agencies, both official and voluntary, but at the same time its deliberations and actions will be authoritative.

Three officers of the Ministry of Health are ex-officio members of the Council.

The Council will have the following composition:

The Minister of Health (Chairman)
The Minister of Court (could also be requested to participate in the Council)
The Minister of Education
The Permanent Administrative Undersecretary for Health (Vice-Chairman)
The Director-General of the General Department of Evaluation and Planning of the Ministry of Health (Secretary)
Representative of the Plan Organization
Representative of the Red Lion & Sun Society
Representative of the Imperial Organization for Social Service
Representative of the Pahlavi Foundation
Representative of the Society for Protection of Mothers and Children

Representative of the Health Divisions of other ministries
Representative of the Municipal Health Departments
Representative of the National Iranian Oil Company Health Division
Representative of the Workers' Social Insurance Organization
Representative of an Iran Medical Association
Representative of the Iran Nurses Association
Representative of the Voluntary Health Organizations
Director of the School Health Program of the Ministry of Education
The Surgeon General of the Imperial Iranian Army
The Surgeon General of the Imperial Iranian Gendarmarie
The Deans of the Medical Schools of Iran

The Council may request any other agency to act as an adviser. It may have directly under its supervision some permanent agencies such as the National Hospital Board, National Research Council, National Council for Professional Education, or Institute of Hygiene. These would have broad scope within the health field but in specialized matters. In a sense, they amount to standing committees.

The Council functions as a coordinating body through which plans flow and authorization returns and is distributed. This type of coordination with decisions binding will provide the most efficient allotment and use of funds for the country, while at the same time preserving a healthy balance between official and voluntary services.

The two fundamental principles which underlie the proposed plan are:

1. Coordination through the Royal Council for Health -

This is possible only through the concept of a unified approach, a recognition of the necessity for pooling funds, manpower, facilities of objectives.

2. Assignment of specific areas of activities -

In this way each agency performs the function for which it is best suited. Each agency maintains its own identity and works for a definite cause. A miscellaneous group of organizations can thus work together smoothly and cooperatively.

Certain corollaries follow:

1. The two principles above when implemented prevent wasteful overlapping, but at the same time permit operation in the same field when the situation demands. It is likely, for instance, that in remote areas the clinics of the Gendarmarie should continue to serve both members of the force and local civilians. As long as this understanding exists among the agencies involved, there is no duplication of effort.

2. The essence of such coordinated action is unified planning.

3. Somewhere, however, in the system a mechanism for setting and maintaining standards is necessary.

4. Successful action of this kind requires a willingness on the part of every agency to follow the decisions of the coordinating body.

Specific Assignments

a. The Ministry of Health (more properly the Ministry of Public Health) will be concerned largely with the community aspects of health. It will be responsible for establishing and maintaining standards of health services. It will initiate the plan for the total health program of the country and will provide the comprehensive evaluation of performance. Its Minister, Administrative Undersecretary, and Director General of the General Department of Evaluation and Planning, ex officio, are the principal officers of the Royal Council for Health. The Ministry will continue to operate certain specialized hospitals, such as tuberculosis and leprosy sanatoria, rehabilitation hospitals, mental hospitals, and others.

b. The Red Lion and Sun Society will continue to exercise control of disaster relief and some nursing amoozeshgahs and will assume operation of most Ministry of Health general hospitals. The Society will become the principal agency for the operation of general hospitals for the medically indigent. When they are able to do so, the municipalities will take over operation of the hospitals serving their area, and by arrangement with the Ministry of Education and the Universities certain hospitals may be operated by them for teaching of medical, nursing, and allied technical students. In remote areas for the present other agencies may be required to provide medical care.

c. The Imperial Organization for Social Service will become responsible for operating separate dispensaries and health centers. Since these, even the smallest, are multi-purpose facilities, staffing may come from several other organizations. This will require close coordination.

d. The Society for Protection of Mothers and Children will assume responsibility for the prenatal and postnatal and child care in the dispensaries and health centers. It may also retain operation of certain specialized hospitals for maternity care. Close cooperation will be kept with the Ministry Division of Maternal and Child Health. It may be advisable for the Ministry to maintain key Maternal and Child Clinics as demonstration and research centers.

e. The health departments of other ministries, whose programs are usually only for medical care, may continue to operate their hospitals if it is necessary in view of special requirements of their employees. Every effort should be made, however, to utilize the facilities of the hospitals in the area. Other ministry hospitals under the coordinated program may be used also for local civilian care.

f. Municipal health departments will ultimately develop to be able to operate within their jurisdictions both preventive and curative services. Supervision of standards will be kept, however, by the Ministry of Health. Close cooperation will be maintained with the Ostan Health Office, and in some instances, no doubt, services will be performed by Ministry officials for the municipality.

g. The National Iranian Oil Company has a continuing responsibility to its workers, but it may well be called upon to furnish care to others in certain regions.

h. The Workers' Insurance Organization will ultimately cease operating hospital services and will confine its activities to the administrative problems of the insurance service. It is probable that this type of coverage will expand in the future. There seems to be no logical reason for this organization maintaining its own hospital service.

i. The Iran Medical Association (when formed) and the Iran Nurses' Association should be important groups for the stimulation of adequate professional standards. They should accept a major share of the responsibility for providing the manpower for the program. They will give maximum support to the problems of professional education.

j. Voluntary health agencies will pursue their chosen work, but will, it is hoped, work in these areas in which official organizations have less freedom of action. Voluntary groups may find their greatest service in developing new areas of service, providing the experimental or pilot stage of a project later to become a part of routine community service.

k. The School Health Program will continue in the Ministry of Education, but will be more closely coordinated with the Division of Maternal and Child Health and the Office of Health Education

l. The Medical Services of the Armed Forces will continue to operate their facilities but a closer rapport will be developed with civilian agencies for mutual support and advantage. In some rural areas military hospitals may be used for civilian care.

m. The universities will continue to provide medical education, but will keep close association with the needs of the country through the Council for Professional Education and the professional societies, as well as the operating agencies in the Royal Council.

NATURE OF THE THIRD PLAN

It will be observed that the commitments in this plan involve direct government financing for the Red Lion and Sun Society, and Mothers' and Children Protection Bongah whose finance has been largely or wholly independent.

The major objective is an efficient, coordinated and comprehensive health service for the nation. The objective in health for the country is that Iran, within its own resources shall produce an efficient, organized health service, both curative and preventive, in which all agencies, governmental and voluntary, are coordinated, each contributing its proper share, so that the people of the cities, towns and villages may have to the greatest degree possible healthful lives.

The main feature of such a plan is the utilization of all health resources within the country, but its essence is coordination. Iran has great strength in its official and private health organizations, its government physicians and its private practitioners, but without coordination these services are wasteful in their duplications and their omissions.

Modern health service combines curative and preventive medicine in an integrated operation. It looks to the gradual creation of an environment which provides positive factors for growth of human welfare.

So far as possible in this plan operating authority and responsibility will be decentralized to the Ostans. The central office of the ministry working under the coordination of the Royal Council for Health will retain policy making, over-all coordination and liaison, determination of standards, general evaluation and planning, technical support, research, and those operations which can be performed best from a central direction. Similarly decentralization from the Ostan headquarters will be taken as far as possible so that the programs reach the people where they live and work. In the cities and large towns, a municipal health department may be the choice; in the rural areas the operation will come under the direct control of the Ostan health department. In the latter case the most effective terminal unit is a small general purpose center without specialized technicians.

STANDARD REQUIREMENTS

The Standards required for hospital beds in a fully developed health service in an advanced country are as follows:

	Beds per 1,000 population
Large city populations (hospitals serve widespread areas in specialties, and offer education and research facilities)	4.5 - 5
Intermediate size city populations (hospitals serve widespread areas in some specialties, and offer education)	3 - 4
Rural Areas - depends on population (distribution in sparsely populated areas. Factors sometimes higher and serve larger geographical areas)	

The following interim standards are proposed for Iran:

	Beds per 1,000 population
Overall acute general	2.5
City of Tehran	4.5
Ostan city population	3.0
Rural communities	1.2

STAFFING STANDARDS PROPOSED FOR IRAN:

Nursing Staff	Nurses	Behyars	Nurse Aids
General Hospital, per 25-bed unit	3	4	8
Tuberculosis Hospital, per 100-bed unit	1	6	20
Mental Hospital, each	2	20	40
Nursing School Faculty, per school	6		
Behyari School Faculty, per school	5		
Shahrestan Hospital Behyari School Faculty per school			
1342-51	3		
1352-56	2		

Midwifery Staff	Nurse-Midwife	Behyari-Midwife
Deliveries attended in a hospital or supervised by midwife	600	300

Note: Varying with geographical location, it is estimated that 20-90% of the deliveries will be attended by untrained midwives, and 5-10% will be delivered by physicians.

Health Center

	Hospital Service	
For Tehran Ostan capital Shahrestan	1 physician	per 25 beds
	3 nurses	" " "
	4 behyars	" " "
	8 nurse aids	" " "
	1 hospital administrator	" "

Community Health Service

*6 physicians (with public health training)
1 nurse
2 public health nurses
6 behyars
*2 nurse-midwives
2 behyar-midwives
*2 social workers aids
*1 dentist
*1 laboratory technician
*2 laboratory aids
*3 pharmaicsts
1 administrator

* These personnel also assist in operating the Hospital Service.

Note The Health Center provides hospitalization, out-patient service, and community health service. Its out-patient Department and Community Health Services cover a population of 50,000. The hospital unit is adjusted to the population to be served. The center can offer maternity service for 1,800 deliveries.in its respective locations.

Health Clinic

For Bakhsh Center

6 physicians
2 nurses
4 behyars
1 nurse-midwife
2 behyar-midwives
2 laboratory aids
2 sanitarian aids
2 pharmacists
1 dentist
1 administrator

Note The Health Clinic provides out-patient and community health service for a population of 25,000. It has also 12 beds for emergency hospitalization. It can cover through attendance or supervision 1,200 deliveries.

The Health Clinic staff supports the Health Stations staff by supervisory visits.

Health Station

For Dehestan Centers

1 physician
1 behyar
1 behyar-midwife
1 sanitarian aid

Note: The Health Station provides dispensary and minimal out-patient care with local community health service for a rural population of approximately 6,000. This is approximately 17 villages. It has 3 beds for emergency hospitalization. It can supervise 300 deliveries, assuming at least one untrained midwife in each village.

Health Offices

For Tehran

12 physicians (all with public health training)
3 public health nurses
1 nurse-midwife
2 social workers
5 health educators
12 sanitary engineers
24 sanitarian aids
8 laboratory technicians
16 laboratory aids

Note: This is considered to be a minimum staffing, and will undoubtedly need augmentation with increase in the program.

For Ostan Capitals

4 physicians (with public health training)
2 public health nurses
1 nurse-midwife
1 health educator
1 social worker
2 sanitary engineers
10 sanitarian aids
3 laboratory technicians
4 laboratory aids

For Shahrestans

1 sanitary engineer
5 sanitarian aids
1 health educator aid

Note: Additional staff support exists in the personnel of the Shahrestan Health Center. One of the physicians of the Shahrestan Health Center, furthermore, holds the additional duty of Shahrestan Health Officer.

DETAILED PROGRAMS

The Programs in the following pages are based on the principles and standards laid down above.

I. RECORDING OF STATISTICS

a. General Background

Iran at present lacks adequate health statistics, and adequate recording analysis of health data is a basic tool for the attainment of all other health goals. Reporting not only of the statistics but of the incidence of disease is inadequate and inaccurate. What data exists is fragmentary and has not been fully collated. In spite of the lack of coordination, there has been a very considerable amount of work done so far. Unfortunately, the collection of these data differs greatly from place to place both in accuracy and contents. The data that has been collected so far is not collated so that responsible decisions can be made in program planning. The concept of a health survey as opposed to mere collection of statistics would remedy this.

The problems are, briefly, inaccuracy and inadequacy of data; incompleteness of statistics in any given area; lack of a built-in continuity of collections; and absence of adequate, continuing analysis of data.

b. Strategy and Policies

The goal of this activity is to produce a standard background of health statistics initially, with continued maintenance thereafter. The plan calls for the development of a strong central office to make the final compilation and analysis of the data collected over the entire country. As the organized health survey is developed as a permanent part of the health services of the country, the actual collection of data will be entrusted as far as possible to the municipalities and the Ostans.

Accordingly, adequate statistical services will be developed in each Ostan health department.

c. Objectives and Targets

The program for this activity will be developed as follows:

A. Collation and evaluation of known data

B. Development of a standard background health survey

C. Maintenance of the standard background health survey

The operations during the Third Plan period will consist of the establishment of the background health survey for an initial evaluation and its development as a pilot for a continuous organized health survey. This will involve some trial and error in determining the most efficient ways of data collection, and the specific needs for statistical material. The next step will be the planning of the organized health survey of Iran as a continuing mechanism for the maintenance of inflow of vital statistics. Field units will have to be staffed for the background survey. Some specially trained collectors will be needed. A well-trained Chief Statistician will be required in each ostan for supervisory work. It will be possible, however, with proper coordination, to utilize many existing health workers, particularly the public health nurses, and public health facilities such as clinics and health centers, in collecting much of the data required. Planning staff at the central level will also be required for the organized health survey.

d. Allocations

See General Statistical Program for funding of this item.

II. EVALUATION AND PLANNING

a. Background Information

Two things have been lacking in Iran's development of health facilities in the past. The first is that new facilities have been provided without a proper long-term plan and without proper coordination. So the program has gone by fits and starts, and the development of health facilities has been uneven both in relation to the different areas of the country and the different types of health activity. The second drawback is that little attempt has been made to see how each activity was faring and to draw lessons from any deficiencies observed. The first and second Seven Year Plans developed by the Plan Organization and the Ministry have in a sense provided a periodic plan. However, these plans have been geared, with few exceptions, to a building program only and the development of associated training facilities has been lacking. Accordingly, at the end of the Second Plan there will still be facilities for which no adequate staff is available. Even within the Ministry of Health there has been inadequate coordination between plans proposed by separate divisions of the Ministry, so that an integrated, comprehensive program has not emerged.

b. Strategy and Policy

The Ministry of Health has just established a general department of evaluation and planning. This will be the foundation of Third Plan activity in this field. The goal of this activity is to establish a continuous evaluation and planning service within the Ministry of Health. The General Department of Evaluation and Planning will report directly to the Minister of Health. This will insure coordination and planning within the Ministry itself but in order to make sure also that there is coordination and planning throughout the entire health field in Iran, and that a coordinated comprehensive health service for the entire country emerges, the General Department of Evaluation and Planning will work very closely with the proposed Royal Council of Health. The director of the General Department of Evaluation and Planning will be the Secretary of the Royal Council for Health.

c. Objectives and Targets

This can be said briefly to be the proper organization of the department within the Ministry, its integration with a National Health Council, the establishment by the Department of adequate liaison with all other health agencies, and activity by the department to develop with the Office of Statistics and Epidemiology an organized health survey of Iran. It will develop background vital statistics in coordination with the Office of Statistics and Epidemiology it will develop within the units of the Ministry of Health an internal system of continuing evaluation, and it will proceed as time goes on to develop the Fourth Five-Year Plan.

d. Allocations

If the Third Plan is to be a success, this unit must be in full-going order as soon as possible. The budget for this department must be made available before the Third Plan, and this should be regarded as one of the important interim measures. The necessary funds for the establishment and operation of this department has been taken into account in the Third Plan Development Expenditure. Whatever sum becomes available before that period can be deducted from development costs and be taken into account in the ordinary budget.

(d) - ALLOCATIONS

1340-41

a. Maintenance

(1) Inspection unit

	Pers			
Div Dir	20			
Sect "	15			
" "	15	= 68,000 x 12 =		
Ass	10		816,000	
Secy	8			
	Fac	= 0		
	Opns	= 15% of P =	122,400	938,400

(1) For Dep Dir & E/P

Dept Dir	30	Pers = Sectn		
Div "	20	= 68,000		
Asst	10			
Secy	8 x 12 =		816,000	
	Fac	= 0		
	Opn	= 15% P =	122,400	

(2) For Secretariat RC/H

	Pers	Unit		
Div Dir	20			
Sect "	15			
Asst	10	60,000		
Secy	8	x 12 =	720,000	
Typ	7			
	Fac	0		
	Opns	= 15% of P =	108,000	
	Coordination (Act.III)		576,000	2,580,800

For Third Plan Period (1341-46)

2,580,800 x 6.62 - 17,084,896

III. COORDINATION, SUPERVISION, AND REGULATION OF HEALTH SERVICES

A. Information There are more than thirty agencies of major importance working in the field of Health throughout the country. Unfortunately they have no coordinated program. There is inevitable over-lap and duplication and indeed omission. Furthermore, there has been little professional supervision or regulation. There is a considerable degree of authority in the control of general medical profession assigned to the Ministry of Health, but no real Medical Profession Act as such. The two most pressing problems are the lack of a strong central coordinated body for all health organizations in Iran and the absence of real medical practice standards.

B. Strategy and Policy The goal is to establish through a central representative body, coordination of all health agencies in Iran, and through legislation and better coordination of agencies to eliminate duplications and omissions. Principally, this will be accomplished through establishing a Royal Council for Health as a supreme coordinating body. The Ministry of Health, however, will remain the central agency within the country through which the standards of preventive and curative services will be maintained. Each health agency will then become responsible in an integrated programme for activities for which it is expressly organized.

C. **Objectives and Targets**. These policies will be applied through the following specific actions:

- i) Establishment of a Royal Council for Health
- ii) Re-organization of the Ministry of Health to operate integrally with the Royal Council
- iii) Establishment of an Iranian National Medical Association
- iv) Enactment of a Medical Practices Act
- v) Enactment of a Nurses Practices Act
- vi) Enactment of a Hospital Practices Act
- vii) Establishment of a basic health standard manual

D. **Allocations**

To be successful this activity must be fully initiated before the Third Plan. It will cost only about half a million rials additional, and this must be regarded as an important interim measure. For costing see Evaluation and Planning.

IV. HEALTH EDUCATION

A. Background Information. Education of the people in the need for health services and the principles of healthful living is vital. Education of people in health will be reached only slowly and should begin with very simple information and hygiene instruction; but it will ultimately produce a people with a positive health consciousness. Every program, therefore, must include some element of health education. Much of health education is carried out by visual display or through personal discussion. From the response of Iranians, both in the small villages and in the large cities, to the health education program thus far it is safe to say that there is a remarkable desire for knowledge of health problems.

The Public Health Education Department has at present one main office and 14 branches with a total of 23 health educators. It has been very active. Its programs have been sensibly geared to the early levels of health education and it has attempted to reach into all regions of the country. It has distributed health education material through mobile movie picture units, through radio, television appearances and other speeches and classes. Much of the work had been in general health education but some has been specifically directed to individual problems such as malaria eradications. A start has been made to introduce health education into the school system.

A good in-service training program is in progress and some staff have been abroad for specialized training.

B. Strategy and Policy. The first goal of the health education program is to ensure that people understand the simple principles of hygiene; the longer term gradual aim is that they come to a knowledge and acceptance of the principles of full healthful living. There must be a division where health education methods are studied and organized, but the basic premise is that all health workers are health educators. Health educators are not expected to cover the whole of the teaching of the public themselves. They act as technical support for the entire group of health practitioners. Health education specialists will be working in a general area of public health programs, but will also be assigned to the development of health education methods in specific programs when they are so needed, such as in malaria eradication or tuberculosis control. Municipalities will ultimately have their own health education service with only general supervision need from the Ostan Health Office, but village areas will be reached through integrated general purpose health service. The responsible agency is the office of Health Education and Professional Training in the Ministry of Health.

C. Objectives and Targets. There must be a strong central supporting staff and a full staff of general and specifically trained workers. The following are the specific targets: (i) Provision of a strong central staff for technical support of Ostan's head of divisions. (ii) Provision of health education specialists in each Ostan. (iii) Establishment of in-service training programs for key health workers. (iv) Development of educational materials. (v) Study and evaluation of methods of health education. Fully trained health educators will be provided in five Ostans - Tehran, Tabriz, Meshed, Isfahan and Shiraz. In-service training will be developed for key health workers in these five ostans. Production of simple basic educational materials will be developed in these five ostans. There will be a continuing study and evaluation of health education methods. Specifically trained health educators will be developed for the major departments and programs of the Ministry.

D. Allocations. This again is a program which cannot wait for the Third Plan. It is already well under way and the objective must be to strengthen the central office staff and the production of health education material. Nearly 30 million rials will be spent in the 1340-41, and allocation is for only another 11.6 million rials during the Third Plan period, almost entirely for the renovation of old mobile units and the constitution of ten new mobile units. For detailed allocations see overleaf.

4. HEALTH EDUCATION

(d) Allocations

1340-41

a. Maintenance
20,400,000 x 0.9 x 1.6 = 29,376,000

b. Development*
See Training (Activity 2)
29,376,000

1341-46

a. Maintenance
29,376,000 x 2/3 x 0.9 x 6.62 = 116,681,472

b. Development*
(1) For Spec Prge =
Pers 15 - Trach 15 - Mal
15 - Tbc 15 - VD
60 x 12 = 720,000

Facilities

Renovate 10 old mobile units
@ 210,000 2,100,000
10 new mobile units
304,000 = jeeps
120,000 = equip
424,000 4,240,000

Opns = 40% of Pers = 144,000

(2) Total
Pers 720,000
Facil 5,900,000
Opns 144,000
6.62 x 864,000 = 5,719,680 11,959,680
128,641,152

* See also Training (Activity 2)

V. ENVIRONMENTAL SANITATION

A. Background Information.

There is no doubt that the relatively unhealthy physical environment of Iran is largely responsible for the high level of morbidity and mortality. The incidence of enteric diseases which may be largely due to impure water and food, is extremely high, and this contributes materially to the low life expectancy. The worst health hazard in Iran is the widespread absence of a satisfactory water supply. Of the three-quarters of the population which lives in rural communities, very few have water supplies which meet acceptable standards and very few have any supervision over food and other environmental factors which affect health.

Government activity in the field of environmental health started about 10 years ago, but its accomplishments have been limited. The need for provision of potable water supplies has been recognized, but trained personnel and a comprehensive program to accomplish the objective have been lacking. The provision of a safe continuous water supply has been one of the principal objectives of the municipal development program during the Second Plan, and substantial progress has been made with municipal programs; but this, of course, does not affect unincorporated villages.

The Ministry of Health has had a training program to provide trained sanitarian aides for Ostan works throughout Iran, but this has fallen short of its objectives.

The one training facility is the Palasht School of Sanitation, whose staffing and curriculum are in need of revision. The sanitation program has lacked an adequate plan. Some sanitation activity has been carried on individually by a few sanitarian aids and has consisted mainly of small water supply activity, installation (and construction) of toilet slabs, and some food shop sanitation. There have been some fairly successful attempts to improve the quality of milk supply and National Sanitary Code has been put into plan, but has not so far been completed.

B. Strategy and Policy The objective is to provide a safe environment, as its relates to the public health, of all the people in the shortest reasonable time. First priority will go to those parts of the program which are most productive in health protection. These include provision of safe water supplies and food, including milk and milk products. Other important objectives, which are less urgent, such as proper disposal of waste and air pollution control will be undertaken as available facilities permit.

First priority will go to the provision of a safe water supply, and this will be one of the principal objectives of the local development program. (For details see that program)

Close cooperation will be necessary between the Ministry of Health and whatever authority is supervising the local development program. If a water and power authority is constituted the General Department of Environmental Sanitation in the Ministry of Health will cooperate closely with it in insuring that proposed water supply and sewage disposal activities are properly drawn up. The objective will be to encourage Municipalities to develop and operate their own health departments, including sanitation activities, with only general supervision from the Ministry of Health and its General Department of Environmental Sanitation. It will be the policy of the General Department of Environmental Sanitation to decentralize its operation to Ostans and sub-offices as much as practical. The General Department of Environmental Sanitation will promote and give assistance in the field of education and training as it relates to the Environmental Sanitation field. This will include improved education for professional engineers; instruction for public health workers, sanitation facility designers and operators; and training of school children and citizens in personal hygiene and community sanitation - of course, in cooperation with the Health Education Department.

C. Objectives and Targets The following objectives are, of course, not solely those of the Ministry of Health. The Ministry plays a part, but the Municipalities and the villages themselves and Plan Organization or its successor as the authority in charge of local development, have a large part to play. The objectives are as follows:

i) Development of potable water supplies for municipalities. This program is now under way, principally with Plan Organization funds.

ii) Development of potable water supplies for village areas. This program is underway but is very limited.

iii) Development of adequate sewage disposal for municipalities. No start has been made on this project, but it would be reasonable to construct sewerage systems whenever water supply systems under pressure are being constructed.

iv) Development of adequate sewage disposal for villages. The same remarks apply as in (iii), but it will obviously be a long time before sewerage systems can be introduced into the villages, and the immediate step is to press on with the privy slab program for each village home.

v) Development of supervision of food processing and handling. This is an important program on which very little has been done, and it should be put in hand at the beginning of the Third program. The next few years will see great development in processing, packaging and transporting foods, including milk and milk products. Present practices in handling, such as washing vegetables in polluted jube water, are frequently dangerous. Plans for new and expanded facilities for processing and packaging foods will be approved by the Ministry of Health. Continuous supervision over food handling will be maintained, probably through local offices. Pasteurization of all milk will be promoted.

vi) Development of community sanitation control. The need for clean and sanitary communities is obvious. The program will include continuous supervision over garbage and waste disposal, public buildings including public baths, swimming places etc. So far as possible this should be a municipal and local program, with supervision of a general kind by the Ministry of Health.

vii) Development of stream pollution control, including control of industrial wastes. While stream pollution is a relatively minor problem at present it will become more serious with the development of sewerage systems, the increase in industry and the increased demand for water of good quality.

viii) Development of air pollution control. Air pollution is so far only a problem in Tehran. It will become worse, if not controlled, with increasing population and industrialization of urban areas. The air pollution in Tehran results primarily from the operation of some 200 brick manufacturing plants and the inefficient operation of the large number of diesel-driven trucks and buses. During the Third Plan period this matter can be given only study and some research.

ix) Enactment of Sanitary Code. The aim will be to enact a reasonable and complete sanitary code for the control of a comprehensive sanitation program by the end of the Third Plan period.

x) Training of environmental sanitation personnel. The shortage of trained environmental sanitation personnel is due primarily to the lack of training facilities. Engineering colleges in Iran do not have adequate courses in sanitary engineering, particularly in water and sewage and waste treatment. The Palasht School of Sanitation of the Ministry of Health has been operating for some years, but its curriculum needs to be revised and the training expanded. The policy will be to develop plans for improved training in all categories of sanitation personnel.

xi) Development of control over sanitation of housing. In the past public housing has been built under Government sponsorship without adequate plans for water or sewerage service. Unsatisfactory facilities have been constructed. The Ministry of Health will seek the cooperation of all Government agencies and private persons and will provide a consultative service and check plans for adequacy of sanitation facilities.

During the Third Plan period an additional five Ostan offices will be brought to full strength making the total number of operating Ostans ten. The continued development of potable water supplies will be encouraged. Municipalities will be persuaded to construct adequate sewage disposal systems. Pilot plant projects will be constructed and operated to determine the best and cheapest types of systems for communities of various sizes in different parts of the country. Supervision of food processing and handling will be expanded.

The interim measure in this area is the reorganization of the General Department of Environmental Sanitation and the creating of a sound Central Office Organization with qualified personnel. The organizations in the Ostans of Tehran, Tabriz, Meshed, Isfahan and Shiraz will be brought to full strength.

(d) - ALLOCATIONS

1340-41

a. Maintenance
27,400,000 x 0.9 x 1.6 39,456,000

b. Development
(1) Offc of Dir
Pers
Dir = 30
Asstn= 25
2 Secy = 16 x 12 = 852,000
71
Fac = None
Opns = 10% of Pers = 85,200
(2) Adm Offc
Pers = Ch. 15
Secy 8
23 x 12 = 276,000
Facil = Equip 20,000
Opns = 10% of Pers 27,000

(3) Div of Engineering
Pers = Div Dir 20
2 Sect Ch 30
5 Jr Eng 45
Secy 8
103 x 12 = 1,236,000
Facil = Equip 30,000
Opns = 30% of Pers 370,000

(4) Div. Sanitation
Pers = Div Dir = 20
2 Sect Ch = 30
2 Asst Ch = 20
2 Jr Ch = 18
Secy 8
96 x 12 = 1,152,000
Facil = Equip 50,000
Opns = 40% of Pers 460,000

(5) Div Lab and Rsch
Pers = Div Dir = 30
2 Sect Ch= 30
60 x 12 720,000
Facil = 760,000
Opns 10% of Pers = 72,000

(6) Ostans

Each:

Pers =	Dir	30		
	Dpty Dir	20		
	3 Sect Ch	45		
	5 Spvs San	50		
	20 San Aid	180		
	*10 Drivers	70		
	1 Adm	10		
	1 Secy	16		
	1 Clk	7		
		428 x 12 =		5,136,000
Facil =	*10 jeeps at 304,000		=	3,040,000
Opns =	40% of Pers		=	2,054,400
			P	25,680,000
	x 5 =		F	15,200,000
			O	10,272,000

* All purpose

(7) **Totals**

Pers	852,000		
	276,000		
	1,236,000		
	1,152,000		
	720,000		
	25,680,000		
	29,916,000		
x 1.6 =		47,865,600	
Facil	20,000		
	30,000		
	50,000		
	760,000		
	15,200,000		
	16,060,000	16,060,000	
Opns	60,800		
	85,200		
	27,600		
	370,800		
	72,000		
	10,272,000		
	11,288,400		
x 1.6 =		18,061,440	81,987,040**

**Total maintenance development re PHD Plan	=	
Less maintenance	=	39,456,000
Devel fraction		42,531,000
		81,987,040

1341-46

a. Maintenance
65,927,040 x 2/3 x 0.9 x 6.62 261,862,203

b. Development
(1) Offc of Director
Pers = Ostan Dir 25 x 12 = 300,000
Facil = Equip 38,000
Opns = 10% Pers 30,000

(2) Admin Office
Pers = Sect Ch 10 x 12 = 120,000
Facil = Equip 10,000
Opns = 10% Pers = 12,000

(3) Div Engineering
Pers = Asst Div Dir 20
Sect Ch 15
5 Asst Ch 50
5 Jr Eng 45
2 Secy 16
12 x 146 = 1,752,000
Facil = Equip 140,000
Opns = 30% Pers 525,600

(4) Div Sanitation
Pers = Sect Ch 15
4 Asst Ch 40
2 Secy 16
71 x 12 = 852,000
Facil = Equip 40,000
Opns = 40% of Pers = 340,800

(5) Div Lab/Rsch
Pers = Asst Dir 20
3 Sect Ch 45
7 Tech 70
Secy 8
143 x 12 = 1,716,000
Facil = 580,000
Opns = 10% Pers 171,600

(6) Ostans
Pers See above 5,136,000
Facil = *10 jeeps 3,040,000
Opns = 40% Pers 2,054,000
15,408,000

x 3 (average figure 9,120,000
for phasing in of one ostan 6,163,200
office per year)

* All purpose

(7) Totals

Pers =

300,000
120,000
1,752,000
852,000
1,716,000
15,408,000
6.62 x 20,148,000 = 133,379,760

Facil =

38,000
10,000
140,000
40,000
580,000
9,120,000
9,928,000 = 9,928,000

Opns =

30,000
12,000
525,600
340,800
171,600
6,163,200
6.62 x 7,243,200 = 47,949,984

191,257,744

453,119,947

Maintain (1341-46)

30 x 6.25 x 0.9 = 168,750,000

Develop

(All dev. exp. even those for
interim period carried over
to Third Plan)

284,369,947

453,119,947

VI. PROVISION AND OPERATION OF HEALTH FACILITIES

(a) General Background

This section is concerned with the physical installations essential for the health program.

Iran has at present about 20,000 hospital beds and many other health installations, spread in a pattern throughout the country. Is this number sufficient, and is the pattern suitable? Is the organization of the health installations of the country such that the people can hope to obtain adequate hospital and first-aid attention, wherever they are? Is there an adequate preventive health service carried out through local areas? We do not have full information at present to answer these questions, but there is much indicative material leading to the view that hospitals are insufficient in number, badly equipped, badly organized as a system, and badly and inefficiently staffed. Moreover, there is no proper organization of health facilities in an ascending pyramid, so that the more serious cases may be passed to the appropriate treatment center.

Furthermore, it is pretty plain that there is a disproportion between the health facilities available in Tehran, and to a less degree in the Ostan capitals, and those available in the smaller towns and the villages; there are even unreasonable differences between Ostans.

From the table it will be apparent that there is an odd distribution of hospital beds between cities, some having more than they need on a population basis, and some less. In the Ostans all have less than they need, but in a varying proportion. The summary picture is as follows:

IRAN: GENERAL HOSPITALS: 1339

Area	Type of Hospital	General
Tehran & suburbs	General	5,469
Other big cities	"	5,320
Ostans (other than cities)	"	5,098
TB sanatoria	"	2,869
Leprosarium		755
	TOTAL	19,511

Problems and Bottlenecks in the Past

Trained personnel, except physicians, pharmacists and midwives, have not been available to hospitals; pathologists, radiologists and other specialists are not available except in a few hospitals located in Shiraz and Tehran.

Medical care is frequently available only on a part-time basis.

Random studies and experiences have shown:

(1) Despite a general shortage of hospitals, there is excessive hospitalization for minor ailments.

(2) Acute diseases are difficult to hospitalize.

(3) Ready emergency treatment and hospitalization is not available in the average hospital.

(4) Excessive daily dispensary services, insufficient records, less than adequate time taken to diagnose, 2-hour personnel attendance, predominance of minor ailments and preventable conditions, no close relationship with hospital services.

(5) Current hospital and health statistics are lacking.

(6) Central control of administration, personnel, equipment and supplies along with the practice of decentralized, uncontrolled daily administration by chiefs of bakhsh patient care units causes a considerable gap between the administration of the Ministry or other organization and the control applied in the unit.

(7) Less than adequate care is accepted at high cost, where adequate care should be given efficiently, effectively and economically.

The following results have been observed:

(1) Planning efforts are difficult. Decisions do not always turn on professional factors.

(2) Cross purposes often intervene to prevent implementation of policy.

(3) Personnel are often found to be incompatible with each other and with the purposes of the institution.

(4) Urgently needed supplies and repairs to equipment have been unduly delayed.

(5) Supply and control of medicines is inadequate.

(6) Until 1339 nursing personnel could not be employed in many government institutions. Now, although employment is possible, budget restrictions limit their actual work.

(7) There is no provision for the employment of specialized personnel - dietitians, record librarians, maintenance, housekeeping and other management personnel. There are no national or local recruitment and training programs for such personnel except at Nemazee Hospital in Shiraz.

(8) Hospital operation, patient care and outpatient services are usually in progress only from 9 a.m. to 11 a.m. A skeletion staff only remains on duty for a 24-hour period. This staff cannot act in an emergency, and is too meagre and unsupervised to assume routine patient care.

(9) Individual responsibility for actions is not enforced.

(10) Too few administrators will delegate responsibility and none has the authority for the job in hand.

(11) Existing civil employment laws regarding employment conditions, salary and retirement are a deterrent to permanent employment of the best-trained, dedicated persons.

(12) Lack of planning and co-operative organization for service causes great duplication of effort.

(13) Budgeting is often unrealistic and cannot be based on efficient accounting practices.

(b) Strategy & Policy

The general objective is development of a comprehensive prevention, diagnosis, treatment and rehabilitation program which will meet the health needs of the people. This will be based on a co-ordination of all health facilities in the country.

In physical terms the program will be to meet the deficiencies exposed by application of the standards set out earlier in this Plan Frame.

The policy will be to develop facilities, using whatever organization is most appropriate for the purpose, which will serve the health needs of Iran and provide a prevention of disease and medical care service effectively and efficiently through a planned standardization, licensing, survey and construction program.

The Ministry of Health has responsibility under the law of 1305 to initiate programming and co-ordination of all health services. It will carry out that responsibility in conjunction with the Royal Council of Health.

The Ministry will set and maintain standards for public health; it will do the same for hospitals and other specialized health agencies through a licensing system applied through educative and consultative methods, though having the force of law.

The Ministry will give over the responsibility of operation of health facilities to other agencies, except in the case of certain specialized functions. These are tuberculosis until the disease is under control and home care; mental hospitals until development can be assumed by others; leprosia until the disease is under control; research in hospital for health center and hospital operation and standards of practice; and teaching facilities for personnel who cannot matriculate in the universities - possibly behyars, nurse aids and hospital administrative personnel.

Dispensaries will be placed under the administration of the local health office, or under other organizations or a central hospital.

In other words, the Ministry will become a programming, planning and standards-developing agency rather than an operating agency in hospital operation. Operations will be a local responsibility.

No new construction or remodelling of health facilities will be permitted without the approval of the Ministry of Health working under the general policy laid down by the Royal Council for Health; this will prevent duplication of efforts, and maintain minimum standards for new physical facilities.

A plan will be developed for the standardization of hospital equipments. Locally produced equipment will be utilized as far as possible. (See detail equipment list prepared by Public Health Department of Plan Organization).

Health facilities will be developed in a planned territorial hierarchy, and will be general purpose in type. In Tehran, and in some instances in the ostan capitals, specialized services will be built.

If health facilities are established in the centers and numbers given below, the map of Iran will show that no-one in the country need be more than 20 km. from medical aid:

	Tehran
10	Ostan capitals
100	Shahrestan Centers
200	Bakhsh centers*
1,200	Dehestan Centers*

* These Bakhsh and Dehestan centers do not necessarily correspond to the present political subdivisions, but are geographical centers of population in respect to local terrain which can serve as local population-service centers.

As described earlier, in Tehran there will be General Health Centers, specialized health facilities, and the national health offices; in the Ostan capitals there will be General Health Centers, some specialized health facilities, and the Ostan health offices; in the Shahrestan centers there will be General Health Centers and the Shahrestan health offices; in the bakhsh centers there will be a general health clinic; and in the dehestan centers a general health station.

The limiting factor in the development of these facilities is personnel. Plans for personnel training are given in Section XI. If planned schedules can be maintained the production of trained personnel in all categories will have staffed all the facilities required and will reach a maintenance stage by 1356. Prior to that time health services will be relatively inadequate, particularly in the rural areas, though to a steadily decreasing degree. In the rural areas it may be possible to use mobile units to bridge the gap before all necessary fixed stations are established. In some regions of the country, the tribal areas for example, mobile units may find permanent use.

The tables which follow give first the standards used and then the requirements for the comprehensive integrated health service planned.

Interim Standards Proposed for Iran

	Beds per 1,000 Population
Overall acute general	2.5
City of Tehran	4.5
Ostan city populations	3.0
Rural communities	1.2

(Utilization figures not available. Some rural communities now have more than 2 beds per 1,000 population.)

STAFFING STANDARDS

Nursing Staff	Nurses	Behyars	Nurse Aids
General Hospital, per 25-bed unit	3	4	8
Tuberculosis Hospital, per 100-bed unit	1	6	20
Mental Hospital, each	2	20	40
Nursing School Faculty, per school	6		
Behyari School Faculty, per school	5		
Shahrestan Hospital Behyari School Faculty, per school			
1342-51	3		
1352-56	2		

Midwifery Staff	Nurse-Midwife	Behyar-Midwife
Deliveries attended in a hospital or supervised by midwife	600	300

Note: Varying with geographical location, it is estimated that 20-90% of the deliveries will be attended by untrained midwives, and 5-10% will be delivered by physicians.

Health Center

For Tehran
Ostan Capital
Shahrestan

Hospital Service

1 physician	per 25 beds
3 nurses	per 25 beds
4 behyars	per 25 beds
8 nurse aids	per 25 beds
1 hospital administrator	

Community Health Service

- *6 physicians (1 with public health training)
- 1 nurse
- 2 public health nurses
- 6 behyars
- *2 nurse-midwives
- 2 behyar-midwives
- *2 social worker aids
- *1 dentist
- *1 laboratory technician
- *2 laboratory aids
- *3 pharmacists
- 1 administrator

*These personnel also assist in operating the Hospital Service.

Note: The Health Center provides hospitalization, outpatient service, and community health service. Its outpatient department and Community Health Services cover a population of 50,000. The hospital unit is adjusted to the population to be served. The Center can offer maternity service for 1,800 deliveries in its respective locations.

Health Clinic

For Bakhsh Center

- 6 physicians
- 2 nurses
- 4 behyars
- 1 nurse-midwife
- 2 behyar-midwives
- 2 laboratory aids
- 2 sanitarian aids
- 2 pharmacists
- 1 dentist
- 1 administrator

Note: The Health Clinic provides out-patient and community health service for a population of 25,000. It has also 12 beds for emergency hospitalization. It can cover through attendance or supervision 1,200 deliveries.

The Health Clinic staff supports the Health Stations staff by supervisory visits.

Health Station

For Dehestan Centers	1	physician
	1	behyar
	1	behyar-midwife
	1	sanitation aid

Note: The Health Station provides dispensary and minimal out-patient care with local community health service for a rural population of approximately 6,000. This is approximately 17 villages. It has 3 beds for emergency hospitalization. It can supervise 300 deliveries, assuming at least one untrained midwife in each village.

Health Offices

For Tehran	12	physicians (all with public health training)
	3	public health nurses
	1	nurse-midwife
	2	social workers
	5	health educators
	12	sanitary engineers
	24	sanitarian aids
	8	laboratory technicians
	16	laboratory aids

Note: This is considered to be a minimum staffing, and will undoubtedly need augmentation with increase in the program.

For Ostan Capitals	4	physicians (with public health training)
	2	public health nurses
	1	nurse-midwife
	1	health educator
	1	social worker

2 sanitary engineers
10 sanitarian aids
3 laboratory technicians
4 laboratory aids

For Shahrestans
1 sanitary engineer
5 sanitarian aids
1 health educator aid

Note: Additional staff support exists in the personnel of the Shahrestan Health Center. One of the physicians of the Shahrestan Health Center, furthermore, holds the additional duty of Shahrestan Health Officer.

Hospital and Community Health Service Populations Estimated in 1,000s

	1340-41	1342-46	1347-51	1352-56
Tehran	1,900	2,100	2,400	2,700
Ostan Capital	190	220	250	280
Shahrestan	26	28	32	36
Rural:				
Bakhsh Center				
Dehestan Center	75	83	94	106

Hospital Beds Required

		1340-41	1342-46	1347-51	1352-56
Tehran	4.5/1000 pop.	8,550	9,450	10,800	12,150
Ostan Caps	3.0/1000 "	5,700	6,600	7,500	8,400
Shahrestans	2.0/1000 "	5,200	5,600	6,400	7,200
Rural	0.5/1000 "	7,500	8,300	9,400	10,650
Totals		26,950	29,950	34,100	38,400

Hospital Bed Requirements by Geographical Unit

	1340-41	1342-46	1347-51	1352-56
Tehran	8,550	9,450	10,800	12,150
Ostan Capital	570	660	750	840
Shahrestan	52	56	64	72
Rural	38	42	47	53

Requirements for Deliveries by Geographical Unit, estimated from BR = 45/1000 population

		1340-41	1342-46	1347-51	1352-56
Tehran		85,500	94,500	108,000	121,500
Ostan Capitals	x 10	8,550	9,900	11,250	12,600
Shahrestans	x 100	1,170	1,260	1,440	1,580
Rural	x 200	3,375	3,755	4,230	4,770
Totals		963,000	1,070,500	1,210,500	1,359,500

Hospital Staffing Requirements

		1340-41	1342-46	1347-51	1352-56
Nurses	3/25 beds	3,234	3,594	4,092	4,608
Behyars	4/25 "	4,312	4,792	5,456	6,144
Nurse aids	8/25 "	8,624	9,584	10,912	12,288
Physicians	1/25 "	1,078	1,198	1,364	1,536

Nursing Faculty Requirements

	1340-41	1342-46	1347-51	1352-56
Nursing Schools	7	8	10	10
Nursing Schools Faculty	42	48	60	60
Behyari Schools	9	11	15	15
Shahrestan Hospital Behyari Schools		100	100	100
Behyari Schools Faculty	45	55	75	75
Shahrestan Hospital Behyari Schools Faculty		300	300	200

Note: It is expected that after 1356 the Shahrestan Hospital Behyari Schools can be discontinued.

Community Health Service Requirements for Staffing

	1340-41	1342-46	1347-51	1352-56
Nurses				
General Duty	3,814	4,136	4,690	5,222
Public Health	383	387	419	451
Midwife	561	565	597	629
Faculty	87	403	435	372
Tuberculosis	40	40	40	30
Mental Health	12	12	12	10
Total	4,897	5,643	6,193	6,714
Behyars				
General Duty	7,792	8,684	9,844	10,828
Midwife	2,369	2,764	3,196	3,428
Tuberculosis	240	240	240	200
Mental Health	120	120	120	100
Total	10,512	11,808	13,400	14,556
Physicians				
Community Health	3,700	4,310	4,590	4,870
Health Offices	232	234	250	266
1/5000, 4000, 3000, 2000 population	4,280	5,925	8,967	15,200
Dentists				
Community Health	380	382	398	414
1/10000, 10,000, 8,000, 6,000 population	2,140	2,375	3,363	5,067
Pharmacists	940	946	994	1,042
Laboratory				
Technicians	218	220	236	252
Aids	816	820	852	884
Environmental Sanitation				
Engineers	132	132	132	132
Aids	2,624	3,024	3,424	3,624
Health Education				
Educators	15	15	15	15
Aids	100	100	100	100

	1340-41	1342-46	1347-51	1352-56
Social Service				
Social Worker	12	12	12	12
Aids	360	364	396	428
Hospital Administrators	460	464	496	528

(c) Objectives and Targets

Distribution of facilities will be dependent upon need, population areas, and geographical conditions. Facilities will be regionalized, and control will remain at the lowest level feasible, although standards will be set and maintained by the Ministry of Health through its Ostan Health Offices.

Note: The facilities are dependent upon higher levels for technical support. Thus, the dehestan looks to the bakhsh, and the bakhsh to the shahrestan.

Without spotting on the map the actual centers and their service areas and then noting the geographical location of all existing adequate health facilities any estimate of the need for new construction is difficult and will include considerable chance for error.

(d) ALLOCATIONS

This program involves building about 5,000 hospital beds (there are approximately 20,000 hospital beds in Iran at present). Completion of the program for 1,000 new T.B. beds under construction and conversion of 59 out-patient departments into health centers. The plan also includes building 200 health stations, 68 clinics, a childrens' medical center and development of village and hospital facilities for lepers.

Development Expenditures
Health Facilities 1341-46
(Rls.Mil.)

	Number		Construction & maintenance
Tehran	1,785	beds	1,502
Ostan capitals	1,410	"	1,256
Shahrestans	1,650	"	1,705
Total. . . .	4,845	beds	4,463
Health stations	200		730
Childrens' medical center	1		124
T.B.	1,000	beds (Completion)	353
Village & hospital facilities for lepers	-		42
Others	-		114
Grand total			5,826

If hospitals have -

	Rls/bed/day cost
Untrained	72
Personnel with basic training	92
Minimum well-trained staff.	100
Adequate well-trained staff	200
Teaching staff.	300
Research staff	500

VII. CONTROL OF COMMUNICABLE DISEASE

MALARIA ERADICATION

(a) Background Information:

Anti-malaria work in Iran started in 1329 and progressively expanded until in 1336 the principle of total eradication of the disease was adopted as a national policy. A plan of operation was then drawn up requiring that old techniques be applied with perfection and new techniques be implemented along the internationally accepted lines.

After an apparently extremely successful start the program is now striking difficulties. Epidemiologically the country consists of two distinct zones, the Northern and Southern, the Zagros range of mountains being the natural boundary between them. Malaria epidemiology in the Northern zone does not differ appreciably from that in countries where malaria has been or is almost eradicated. But the Southern zone presents at this time puzzling problems. The current approach in malaria eradication is not achieving results.

Vector resistance to insecticides, vector resting habits on unsprayable surface areas, nomadism, seasonal migration of people, sleeping out of doors, and the very low socio-economic status in some areas are contributing factors which need further study before a new plan can be proposed. In many parts of the Northern zone the campaign has been largely successful and has reached the stage of consolidation, in which, although much work is involved, there should, all being well, be little recurrence of the disease.

(b) Strategy and Policy

The basic policy remains that of total eradication of the disease, but it is now recognized that in the light of the difficulties in the Southern zone a reorientation of the program is necessary. The exact form of this reorientation is not yet clear. But it is clear that earlier hopes for total eradication of the disease in a short time must be abandoned, and the policy will be to move towards total eradication in a more scientific and necessarily slower fashion.

In the Northern zone where the program is well advanced and the majority of the areas are in the consolidation phase, maintenance of the gains already made is envisaged, together with inauguration of the preparatory phase in that portion of Khorasan which is not yet in the attack phase.

The program will be continued at a higher level of efficiency. The administrative structure will be strengthened, training of technical and administrative personnel will be intensified, and evaluation techniques will be improved. Provision will be made for adequate and prompt reporting methods to permit continuing analysis of progress and timely corrective measures.

In the Southern zone existing techniques have failed to interrupt transmission of the disease and reorientation of the program is necessary. This calls for a simple holding action to maintain such achievements as have already been attained in some areas whilst seeking methods of overcoming problems in specific areas. Emphasis is to be given to pilot projects in strategic locations to deal with mass drug administration, experience with varied residual insecticides under a closely supervised program, geographical reconnaissance to delineate malarious areas and foci, epidemiological mapping of malaria flare-ups and preparation of a plan that leads towards total eradication.

Special efforts will be made in the meantime to prevent reintroduction of the disease in the North.

(c) Objectives and Targets

Specific targets:

A. Completion of eradication in the Northern zone.

B. Continuation of research on various aspects of malaria problem and development of pilot studies in the Southern zone.

C. A plan for eradication in the Southern zone.

D. Enactment of special enabling legislation for the malaria program.

E. Provision for specialized training locally and abroad.

F. Implementation of an intensive public health education campaign.

(a) Eradication in the Northern zone.

This area has now been under residual spraying approximately ten years, but localities of transmission still exist. This has been attributed to the sudden switch from a control to an eradication program without meeting the prerequistions for the more detailed operations necessary for the success of the latter. Geographical reconnaissance at least in these positive localities needs to be superimposed on the routing program. The discovery of "new" villages is far too commonplace in areas under eradication.

(b) Research on malaria problems and development of pilot studies in Southern Zone.

The Institute of Malariology will continue with its researches and studies on every aspect of malaria epidemiology and malaria problems in Iran. These studies will be directed toward two main goals:

1 - Study of ways and means of reintroduction of malaria in the Northern zone from the south and of entomological infection potentials of areas under consolidation.

2 - Continuation of studies on Bionomies of vectors and various aspects of epidemiology of malaria in the south of Iran, (stable, unstable, malaria among tribal and moving population, etc., and development of pilot study and eradication areas, in which every possible ways for interruption of transmission will be tried and evaluated.

The Institute of Malariology maintains full-time field stations and mobile teams for epidemiological investigations, mosquito surveys and other special studies. There are two research stations at present, but further pilot projects adequately staffed, supervised and coordinated would be expected to yield valuable data upon which a realistic plan can be developed. With the double resistance in A. stephensi to DDT and DLD together with preliminary discouraging results of malathion, pilot studies utilizing other insecticides (e.g. BHC), and exploring methods of mass drug administration are in order. Based on these studies special attention must be given to geographical reconnaissance and the delineation of the non-malarious areas.

(c) Complete Eradication in the Southern Zone

It is expected that based on studies on Pilot Projects, as well as by discovery of a better and longer lasting drug, a new effective insecticide against resistant mosquitoes or some other weapon (for which scientists in many lands are vigorously searching) that the plan of eradication in the south could be drawn by the Scientific Council by 1344 and implemented.

(d) Enactment of Legislation

For the proper implementation of a malaria eradication program pertinent national regulations are generally necessary. Obligations of the public as regards collaboration, compulsory notifications, quarantine measures, regulations governing the movement of population from malarious to free areas should be covered with sufficient clarity. This would also provide remuneration of those responsible for the execution and observance of the law, and determination of penalties and awards.

(e) Specialized Training

It is not so much a matter of inadequacy of training facilities but rather the wasted effort due to the large turnover of personnel who receive such training. The Institute of Malariology will continue to assume the prime responsibility of in-country training.

Regular courses organized by the Institute are as follows:

3 months course (with 6 months field training) for senior officials (malariologists, entomologists, chiefs of malaria laboratory, etc.).

3 month course for junior officials.

3 month course (with 3 months field training for microscopists)

1-2 months courses for training of other category of personnel (statistical clerks, surveillance agents, group leaders, mappers) will be organized in headquarter or at the ostan level. Advanced training of personnel assuming or slated to assume key positions in the program is provided annually in cooperation with international agencies at the

Malaria Eradication Training Center in Jamaica and other centers dealing with special malaria problems.

(f) Health Education in Malaria

The Public Health Education program of the Ministry of Health includes malaria in their activities but this has not met the needs and the demands for a special concerted effort geared to educate the public. It is just as important to break through human resistance as it would be through mosquito resistance. Resistance to blood sampling and drug treatment, not to mention spraying, is on the increase. This is mostly due to lack of information, misinformation to disappointment over failure of previous spraying to kill all household pests, and due to fear of adverse effects of the treatment.

7 a. Malaria Eradication

Allocations

1340-41	Institute of Malariology	Malaria Eradication Org.	Total
a. maintenance b. development			
Personnel	56,000,000	466,500,000	525,500,000
Facility	12,000,000	86,500,000	98,500,000
Opns.	12,000,000	133,500,000	145,500,000
TOTAL	80,000,000	686,500,000	766,500,000

GRAND TOTAL 766,500,000

The sum of Rls.766,500,000 include overall cost of operation irrespective of source. It is expected that 125,000,000 rials will be paid from local (Ministry of Health, Tehran University) or International sources. If so, Plan Organization should provide Rls.58,000,000 for the Institute and rials 583,500,000 for the Malaria Eradication Organization.

1341-46	Institute of Malariology	Malaria Eradication Org.	Total
a. maintenance } b. development)			
Personnel	230,000,000	2,350,000,000	2,580,000,000
Facility	65,000,000	335,000,000	400,000,000
Opns.	65,000,000	670,000,000	735,000,000
TOTAL	360,000,000	3,355,000,000	3,715,000,000

GRAND TOTAL 3,715,000,000

Background Information on Cost Estimates for Malaria Funding Third Five Year Plan

1 - All figures show malaria expenditures and not those that are normally a Ministry of Health cost, such as maintenance after malaria is eradicated, i.e., after consolidation.

2 - All figures show actual total cost of operation, irrespective of their sources and contributing agencies. Estimates of these contributions from local sources (Ministry of Health and Tehran University) are listed below plus estimates of International contributions based on personal opinion, since no commitments have been made.

Source of Fund	Institute of Malariology	M.E.O.	Total
Ministry of Health	2,750,000	46,750,000	49,500,000
Tehran University	27,500,000	---	27,500,000
TOTAL . . .	30,250,000	46,750,000	77,000,000
UNICEF	18,000,000	160,000,000	178,000,000
WHO	16,500,000	37,000,000	53,500,000
ICA	5,800,000	17,400,000	23,200,000
TOTAL . . .	40,300,000	214,400,000	254,700,000
GRAND TOTAL . . .	70,550,000	261,150,000	331,700,000

3 - It is understood that if the sums of 331,700,000 rials could be provided by local and international sources, then the Plan Organization should make available a sum of rials 3,383,300,000 for the performance of malaria eradication during the Third Plan period.

4 - Cost estimates are very conservative and were prepared in an atmosphere of realism taking into consideration the following: (a) timely release of funds, (b) better organization and direction of malaria eradication, (c) tightening the belt through better supervision and better personnel management, (d) that the organization will not spread itself too thin and be unable to do specific jobs properly.

5 - It should be noted that surveillance in the northern part of the country by the end of the Five Year plan should be shouldered by the Ministry of Health through its ostan organizations.

However, in any areas declared cleared of malaria prior to this period the cost of maintenance should not be reflected as a malaria cost although it might be necessary that the Malaria Eradication Organization conduct this phase of the activity in the absence of other organized effort on the part of Ministry of Health.

6 - It should be emphasized that inflation, increase in personnel services and salaries were not taken into account and figures were based on current costs. However, we should remember that this figure compares quite favorably with the world average.

7 - Bias and confidence limits are difficult to measure because data based on past performance do not fulfill the criteria for a statistical analysis on which accurate costs could be projected.

8 - Malaria Eradication program is in most of rural areas, the very first health activity ever started. Thus most of expenses performed for organization of Dehestan, Bakhsh and Shahrestan centers could be considered not only for malaria eradication alone, but as a contribution to the development of rural health service. Furthermore trained personnel at the service of malaria eradication will serve in the future as local health officials.

9 - The Institute of Parasitiology and Malariology is charged with other study and research duties pertaining to endemic diseases of Iran. The budget specifically needed for study and

research on malaria training of personnel, planning and evaluation of anti-malaria activities (about 10% of total cost of operation) are included in this chapter. Budget of study of other endemic diseases appear under XII 'Provision of Research Facilities' (12).

SPRAYING

Years	North Part	South Responsive	South refractory	Total	Total amounts estimated Rls	Defects
1341(½)	6000	6,346	500	12,864	64,320,000	53,020,000
1342	10000	10,000	1,000	21,000	105,000,000	
1343	8000	9,000	1,000	18,000	90,000,000	
1344	7000	8,000	20,672	35,672	178,360,000	
1345	1000	7,000	20,672	28,672	143,360,000	
1346	-	6,000	20,672	26,672	133,360,000	
Total	-	-	-	-	714,400,000	
					Grand Total	767,420,000

SURVEILLANCE

1341(½)	13000	6,416	516	19,632	176,688,000	106,040,000
1342	27000	12,828	2,000	41,828	376,452,000	
1343	28565	12,828	3,000	44,393	399,537,000	
1344	28565	12,828	10,336	51,729	465,561,000	
1345	28565	12,828	10,336	51,729	465,561,000	
1346	28565	12,828	10,336	51,729	465,561,000	
Total	-	-	-	-	2,349,360,000	
					Grand Total	2,455,400,000

7. Activity - CONTROL OF COMMUNICABLE DISEASES

b. Smallpox

(a) Background Information

The anti-smallpox campaign has had unusual success in prevention of the disease. In Iran, as elsewhere throughout the world, the smallpox epidemics of past centuries and even relatively recent decades, have been among the great scourges of mankind. These epidemics have ranked in severity with the great pandemics of plague, cholera and influenza. Smallpox is one of the few diseases for which there is a highly specific preventive, namely vaccination with cowpox virus. Therefore, health workers have within their power the means to eradicate smallpox from the world. The fact that it still exists at all now approximately three hundred years after Jenner first proved the value of vaccination is an indication that vaccination still has not reached large number of people throughout the world, and that they in turn have not necessarily accepted the procedure.

Statistics

Estimate of the disease incidence indicated 2,500 cases in 1334 with a widespread distribution throughout Iran. By 1338, the number of reported cases had dropped to 138.

Progress to Date

The mass vaccination campaigns have been carried on in two periods. The initial campaign was country-wide and provided the first attempt at eradication. For obvious reasons, it was not possible to reach all of the population, or to gain acceptance by all people throughout the country. Nevertheless, this was a highly successful first step toward eradication. The second round began in 1339 and will be carried through to the end of the Second Seven-Year Plan period, namely to Shahrivar 1341. It is expected that a total of ten million people will have been inoculated during the second round. During the last 2½ years of the second round, triple vaccine, against diphtheria, pertussis, and tetanus, has been added to the program. Both vaccinations and inoculations have been carried out by the smallpox vaccinators. Strict border control of vaccination certificates of all incoming travellers has been a considerable factor in reducing the incidence of small-pox within the country.

Present Problems

The most obvious problem is the need for continuing the mass vaccination program until the entire population has been immunized. With this done, a maintenance program through routine channels can easily be followed. It is questionable whether the problem of DPT and quarantine service should be added to the smallpox project.

(b) Policy and Strategy

The goal of the program is the eradication of smallpox from Iran. The priority is obviously immediate, and the responsible agency is the Division of Communicable Diseases of the Ministry of Health. The entire program is a specific task force approach through mass vaccination campaigns. The general strategy assumes that it will be possible to revert to routine control, following the completion of the second round of the mass vaccination campaign now in progress. The DPT program now associated with the vaccination campaign should be completed as at present planned. It would be unwise to interrupt the procedure at the present time. As soon as the intial once-over inoculation has been given, the program should revert to the routine administration of DPT to all new-borns.

During the Third Plan operations will be decentralized and concentrated in the Shahrestans. The mobile units will be strengthened considerably. This program must be coordinated with the overall health program making use of the all purpose health facilities.

(c) Objectives and Targets

Special note should be made of the third specific target indicated below. It is exceedingly important to evaluate such campaigns for judging future campaigns of a similar nature in Iran, as well as the mechanisms for extending smallpox eradication in other countries of the world. Specific targets are as follows:

1. Continuation of the second round of the mass smallpox vaccination campaign.
2. Continuation of the DPT inoculations as part of the smallpox campaign.
3. Conduct of a epidemiological evaluation of the mass campaign.

(d) Allocations

1340-41

a. Maintenance

b. Development

(1) For further smallpox vac

$$\left.\begin{array}{l}\underline{\text{Pers}}\\ \underline{\text{Facil}}\\ \underline{\text{Opns}}\end{array}\right\}\quad \frac{90{,}000{,}000}{2\frac{1}{2}} \times 1.6 = 57{,}600{,}000$$

(2) for DPT

Pers
Facil) $\frac{32,000,000}{2\frac{1}{2}} \times 1.6 = 20,480,000$ $\frac{78,080,000}{80,453,600}$
Opns

1341-46

a. Maintenance

2,373,600 x 2/3 x 0.9 x 6.62 = 11,413,943

B. Development

(1) for smallpox vac. 30,000,000

(2) for DPT inoc. 18,000,000

48,000,000 x 5 = 240,000,000

Maintenance of low incidence in coordination with overall plan covering 65 shahrestans 203,000,000

Total 443,000,000

7. Control of Communicable Diseases

c. Tuberculosis

(a) Background Information

In the absence of adequate surveys, it is impossible to judge the degree and intensity of the problem of tuberculosis in Iran. That it is a problem, there can be no doubt. The number of advanced patients in the hospitals indicates that the infection must be widespread. As in many countries in the world, the conditions which foster the spread of tuberculosis exist in almost all regions of the country. The control of the disease in any country rests upon principles of coordinated action, health education, vigorous case finding, treatment of early cases, isolation of patients, improved personal and home hygiene, controlled safe food supplies and the improvement of nutrition. Tuberculosis can be eradicated from the country but an intense and continuing national effort.is required.

Statistics

At present it is estimated that two to three percent of the population in general are infected. In some areas, the incidence may be as high as 20%. There is no way of determining the number of open cases. Approximately 3,000 patients are not hospitalized. Tuberculosis control within the Ministry has been vested in a more or less autonomous general department of tuberculosis. It has operated three sanatoria and jointly sponsors two additional sanatoria, all totalling 2,850 beds. There are in addition 1,050 beds under construction in 7 150-bed sanatoria. These hospital beds are located as follows:

Shahabad Sanitarium, Shemran........	1,000 beds
Boo-Ali Sanitarium, Tehran	800 "
Meshed "	200 "
Joint Ministry and Red Lion and Sun Sanitarium, Shiraz	400 beds
Joint Ministry and Tuberculosis Protection Society Sanitarium.......	450 "
Under construction	1,050 "
Total	3,900 beds

There are separate health centers operated by the Ministry in Tehran, Isfahan, and Shiraz. The Red Lion and Sun Society and the Workers' Social Insurance Organization also operate tuberculosis sanatoria and case finding at treatment centers. An extensive BCG vaccination program has been carried on with the assistance of the World Health Organization. An evaluation of this campaign is at the present time being conducted by WHO. A sporadic case finding campaign utilizing mobile X-ray units has been conducted in the past. There has been some in-service training of professional workers in tuberculosis cases. A more recent reorganization of the Ministry has created the Tuberculosis Control Organization which will operate directly under the Technical Under-secretary.

Problems at Present

Major problems in the control of tuberculosis are the following:

1. Incidence of far advanced cases outnumbers available beds.
2. Home conditions are usually poor.
3. Families are often large and young.

4. Incidence among children is said to be high. There are no facilities for the care of children.

5. The 18-month limit on hospitalization does not permit cure of the disease before discharge.

6. The large wards, lack of education procedures (lack of trained personnel) inability to segregate sputum from sputum patients because of lack of laboratory facilities permit the development of treatment resistive bacilli.

7. BCG vaccination programs reach only those who come to the tuberculosis centers.

b. Policy and Strategy

The goal of the program is to prevent and treat tuberculosis through standardized methods and well-distributed facilities so that the public will be protected through education, early case-finding, and reduction of exposure of young people. In the absence of accurate figures of incidence in distribution but with full consideration for the ubiquitous conditions favorable to the disease, a general widely distributed approach is justified. Therefore, the case finding and preventive measures will be taken through a service operated as part of the general public health clinic-dispensary-health center program. Rather than the extension of separate tuberculosis centers, the use of widespread BCG program will be continued unless the present WHO survey indicates ineffectiveness. As much as possible combined with early case finding, the use of drugs will permit the ambulatory and home treatment of the tuberculosis patient. The number of hospital beds will be matched very closely to the need, and it is expected that a comprehensive well-integrated program with vaccination and home care will reduce the number being admitted to the hospital to a figure which could be reasonably met in terms of sanatoria. The special staff required for the program will be kept to a minimum and used in supervisory positions. As much reliance as possible will be placed upon the general purpose staff of the clinics and health centers. The burden of supervision of the Ostan will fall upon the Ostan health department, but a system of regional consultants from the Tuberculosis Control Organization will supplement and assist in their duties. Obviously, it will be necessary for health education to assume a major role in the control of tuberculosis. Certain legislative changes are necessary to permit the best of modern effective care to be given in Iran. This applies principally to the removal of the restriction on hospital stay. Advanced cases will not be returned to the community so that adequate support for isolation and continuation of treatment to cure is supplied.

c. Objectives and Targets

These are:

1. Further development of program for education of public in prevention of tuberculosis to impact level and continuation until effectiveness is noted.
2. Development of a central tuberculosis registry and follow-up.
3. Development of tuberculosis case finding, vaccination and ambulatory care.
4. Standardization of all treatment and care programs to an effective level and integration with case finding, education, and follow-up programs.
5. Incorporation of education and rehabilitation into treatment of tuberculosis.
6. Completion of hospitals under construction.
7. Planning new construction on basis of need.

8. Enactment of necessary legislation.

9. Provision of in-service training in methods of tuberculosis case finding and care for professional workers.

10. Planning with Department of Environmental Health and the Ministry of Agriculture a program of milk-shed, food handling, personal and home hygiene control.

d. Allocations

1340-41

a. Maintenance

b. Development

(1) Central Office of the Control Org.

Pers = Dir	30	
Depty "	20	
2 Sect Ch	30	
2 Secy	16	
	96 x 12	1,152,000
Facil = Equip		35,000
Opns = 20% of pers		276,000

(2) BCG Vac. 20,000,000

(3) Regional Office

Pers Dir	20	
Stat	10	
Secy	8	
	38 x 3 x 12 =	1,368,000
Facil = Equip		10,000
Opns = 35% of Pers =		478,800

(4) Totals

Pers =	1,152,000		
	1,368,000		
	1.6x 2,520,000 =	4,032,000	
Facil =	35,000		
	10,000		
	45,000	45,000	
Opns =	276,000		
	20,000,000		
	478,800		
	1.6x 20,754,800 =	33,207,680	37,394,680

1341-46

a. Maintenance

37,239,680 x 2/3 x 0.9 x 6.62 =		147,916,013
Less P.O. Contribution to BCG Vac to be carried over to Develop. 20,000,000 x 0.9 x 6.62 =		119,160,000
		28,756,013
Development		
(1) 3 mobile units 1,000,000 x 3 x 6.62 =	19,860,000	
(ii) Facility 3,000,000 x 3	9,000,000	
(iii) BCG vaccination brought over from maintenance	119,160,000	
(iv) 25 T.B. Centers		
Cost and equip.	125,000,000	
Operation	100,000,000	
Total	373,020,000	373,020,000

7 d. TRACHOMA

(a) Background Information

Trachoma is a major problem in communicable disease control in Iran. It is apparently responsible for most of the blindness in the country. But although it is exceedingly prevalent, its actual extent and distribution is not clearly identified. Although an eye disease, its control will lie in a broad program involving the social and economic life of the people, rather than a simple medical approach.

Statistics

Because trachoma almost always is associated with other types of eye infection, it is very difficult to reach a firm figure on the incidence of the disease itself.

Progress to Date

Local and restricted studies have been made on the trachoma problem within Iran. Since this is one of the regions of high incidence throughout the world, several international bodies have pursued studies in this region. Much has been done in the treatment of individual cases. Unfortunately, no unanimity of opinion among specialists has resulted as to the most effective means of therapy. Recently a vaccine has been produced which its proponents claim is specific. This has not had widespread use as yet and is not generally available. However, in spite of all these studies, no definitive epidemiological program or control measures have been developed.

Present Problems

The present problems, therefore, are to determine through general and specific epidemiological studies the extent and distribution of the disease, the most effective therapy, and finally the design of an eradication program.

(b) Policy and Strategy

No definite eradication and control program is yet possible. The nature of the disease determines, to a great degree, the policies which must be followed in attacking it. Obviously, the approach will be a broad one, involving medical, social, and economic aspects of living throughout Iran. Because of high incidence in childhood, an approach through the maternal and child clinics, whether control can be effected through the family. In general, however, the nature of the approach is a broad coordination of many units within the Ministry. This indicates a task force type of action. The initial research studies can be carried out by the Institute of Malariology which is well equipped for such work. The Institute could cooperate with Trachoma Control Organization on the same basis as it now works with the Malaria Eradication Organization.

(c) Objectives and Targets

These general policies will be implemented through aiming for the following speicifc targets:

1. Establishment within the Ministry of Health of a Trachoma Control Organization.

2. Development of adequate treatment services as near to the homes of the people as possible, being mindful of proper medical standards.

3. Conduct of a general survey to obtain some estimate of the numbers of people involved and the geographical distribution of the disease.

4. Conduct of detailed, but limited, study in carefully selected areas to determine the specific epidemiology of the disease in Iran.

5. Planning and conduct of a mass campaign against the disease, based on principles established in the pilot studies.

6. Integration of maintenance phase into routine operations of the Ministry.

7. Development of coordinated research studies in the control of trachoma.

(d) Allocations

1340-41

a. Maintenance

b. Development

(1) Central Office Trachoma Control Org.

Pers	Dir	30	
	Dpty "	20	
	2 Ch	30	
	2 Secy	16	
		96 x 12 =	1,152,000
Facil = Equip			35,000
Opns = 20% Pers			276,000

(2) Totals

Pers = 1,152,000 x 1.6 = 1,843,200
Facil = 35,000
Opns = 276,000 x 1.6 = 441,600
2,319,800 2,319,800

1341-46

a. Maintenance
2,284,800 x 2/3 x 0.9 x 6.62 = 9,075,040

b. Development

(1) Research
Pers = Co-ord. 20 x 12 = 240,000
Facil = Equip 10,000
Grants 500,000 510,000
Opns = 20% Pers 48,000

(2) Pilot Project

Pers = Dir 20
3 Sect 45
6 Field 48
6 Tech 48
2 RN 20
181 x 12 2,172,000

Facil = Equip
Lab 76,000
3 Jeeps 600,000 676,000

Opns = 40% of Pers 868,800

(3) Totals

Pers = 240,000
2,172,000
6.62 x 2,412,000 = 15,967,440

Facil = 510,000
676,000
1,186,000 = 1,186,000

Opns = 48,000
868,800
6.62 x 916,800 = 6,921,600
24,075,040 24,075,040
33,150,226

7 e. LEPROSY

(a) Background Information

The disease is centuries old but has only recently been attacked with drugs which give hope of its eradication. It will not be a simple process, but with modern drugs and social services, there is every expectation that leprosy can be conquered.

Statistics

The nature of the disease and the horror it has inspired in people throughout centuries, makes gathering accurate statistics exceedingly difficult. It is estimated that there are 2,500 lepers who have been definitely detected in Iran. It seems likely that there is an equal number unidentified. Since leprosy is a disease which is slow in developing, the early stages particularly are missed. Unfortunately, this is the period when cure is most likely.

Progress to Date

There is one clinic in Tehran and two leprosaria, one in Tabriz and the other in Meshed. Altogether these facilities house 850 people. Craftwork is taught at the leprosaria and schools are provided. Otherwise there is no social service provided.

Present Problems

Present facilities clearly accommodate less than half of the known lepers in the country, much less those not yet detected. If diagnosis of leprosy is made, it is likely that the disease in relatively far advanced. Hence, one of the pressing needs is for additional sanitarium beds. It is quite possible, however, that all of the lepers outside of institutions are not in need of hospitalization. Case finding is another deficiency. The medical treatment of the patients in the hospitals seems fairly good, but the ancillary services are greatly deficient or lacking altogether. It is difficult to staff adequately both the institutions.

(b) Policy and Strategy

Strategy starts with the assumption that leprosy can be eradicated. This lies in a broad attack through medical, social and economic agencies. The future is brighter in that through the use of modern drugs, it is possible to develop ambulatory treatment. It is apparent also that some at least of the present inmates of the leprosaria can be rehabilitated to their homes and families. Those for whom this is not possible can undoubtedly be usefully engaged in trades within specialized village compounds. Basic to all this is a case finding program which will lead to early detection and immediate treatment. This will be the responsibility largely of the Ministry of Health through its Division of Communicable Diseases and Section of Special Hospital Services.

(c) Objectives and Targets

Within these general policies, the following specific targets have been established:

1. Development of a case-finding system designed both to find advanced and, particularly, early cases.
2. Provision of research facilities at the two existing leprosaria.

3. Evaluation of present patients with view to discharging those who can be returned to their communities.

4. Development of continuation treatment facilities in the central hospital of each Ostan.

5. Development of general health education program concerning the possibility of rehabilitation of patients with leprosy.

6. Development of a village-type facility for those who can work but cannot return to their former homes.

(d) ALLOCATIONS

1340-41

a. Maintenance 12,000,000 x 1.6 = 19,200,000

b. Development

(1) Central Office

Pers = Dir 20
Asst 15
Secy 8
43 x 12 = 516,000

Facil = Equip = 20,000

Opns = 30% of Pers = 154,800

(2) Research

Pers = Dir 20 x 12 240,000
Facil = Equip 10,000
Grants 300,000 = 310,000

Opns = 20% of Pers = 48,000

(3) Consultant
76 x 6 456,000

(4) Totals
Pers 516,000
240,000
1.6 x 756,000
=1,209,000
456,000
1,665,600 1,665,600

Facil 20,000
310,000 = 330,000

Opns 154,800
48,000
1.6 x 202,800 = 324,480
2,320,080 2,320,080
2,320,080

1341-46		
a. Maintenance		
1,534,080 x 2/3 x 0.9 x 6.62 =		6,093,366
b. Development		
(1) Mobile unit		
Pers) Opns) 1,000,000 x 6.62 =	6,620,000	
Facil 3,000,000	3,000,000	
	9,620,000	9,620,000
Develop		
Increased supply		
Increasing daily budget to Rls.40 per patient		76,250,000
		85,870,000

Note: A substantial sum has been alloted to this section in the health facilities program i.e., 134 million rials for supporting leprosy facilities.

7. f. Venereal Disease of Communicable Diseases

(a) Background Information

Although venereal disease is a social disease, depending upon the habits of the population, it is no respecter of social or economic status. It exists everywhere and while certain groups may, in general, show a higher incidence wherever foci remain, there is always danger of transmitting infection. Therefore, the attack must be a broad general one.

Statistics

No accurate statistics as to the extent and true distribution of the infection are available. Certain areas of the country are said to show a higher incidence than elsewhere but it is doubtful if this can be supported in view of the absence of countrywide figures. The disease takes the specific local form of Bejel in certain areas.

Progress to Date

There are 13 venereal disease centers in the large cities and mobile units for the southern and border regions of the country. Quarantine quarters are planned for the port areas. There is a specialized venereal disease hospital in Tehran. Patients can be hospitalized for treatment but cannot be retained against their will

Present Problems

The most obvious deficiency in the present program is that the attack comes too late. Only after the patient becomes infected.

does he come under the medical system. There appears to be no consistent follow-down of contacts with a view to eliminating the sources of infection. The treatment furthermore seems to be restricted largely to the big cities. It does not seem likely that the disease is likewise confined to the urban areas.

(b) Policy and Strategy

The goal of the program is eradication of venereal disease for the population. This is not an impossible goal by any means but will require tremendous consistent and long-term effort. Venereal disease is fundamentally a medical-social problem and not one primarily for the law enforcement agencies. It is imperative, however, that adequate laws be provided the officials in order to allow follow-down of contacts and to force continuation of treatment until infectiousness had been eliminated. Generally, control programs appear to have their greatest success when they become a part of routine health programs. Therefore, the treatment and case-finding facilities will be broadened far beyond the clinics and mobile units now employed. An essential part of the campaign will be a health education program.

(c) Objectives and Targets

These general policies will be carried out in the following manner:

1. Development of minimum background survey to establish estimate of incidence and geographical distribution.

2. Development of legislation requiring reporting of positive cases, indication of contacts, and continuation of treatment.
3. Development of intensive health education program
4. Development of treatment facilities in all hospitals and clinics.
5. Development of system of follow-up of contacts.

7 f.

Venereal Disease Allocations

1340-41

a. Maintenance

64,000,000 x 0.9 x 1.6 =		92,160,000
b. Development		---
		92,160,000

1341-46

a. Maintenance

92,160,000 x 2/3 x 0.9 x 6.62 =		366,059,520
less 16,000,000 x 0.9 x 6.62 =		89,380,000
		276,779,520

b. Development

1. Health Education

Pers See "Health Education"		
Facil Films etc. 1,750,000 9 mobile units 348,000	4,850,000	
Opns Publicity 1,000,000 5 mobile 30,000,000 31,000,000	31,000,000	

2. Extension & Development of facilities in Ostans

Pers Div. Dir 20 Dpty " 15 35 x 12	420,000	
Facil Equip	10,000	
Opns 40% of Pers	118,000	

3. Totals

Pers 10 x 6.62 x 420,000	27,804,000	
Facil 10 x 10,000 = 100,000 4,850,000 4,950,000	4,950,000	
Opns 31,000,000 118,000 6.62 x 31,118,000 =	20,600,000	
Add P.O. contribution	89,280,116	
	143,634,116	143,634,116
		420,413,639

7 g. Others

(a) General Background

1. Diphtheria, pertussis and tetanus. These diseases are essentially those of childhood and may be approached primarily through that age group.

The approach is primarily preventive and is best administered through providing DPT inoculations for all infants. At present, there is a mass inoculations campaign being conducted in association with the second round of the mass smallpox vaccination campaign. This, if pursued to the completion of the second round, namely, Shahrivar 1341 and into the Third Round ending Esfand 1346, should give a good base inoculation for the majority of the susceptibles in Iran. It will be necessary, however, to follow this up yearly with inoculation of all newborn infants. This, therefore, is a continuing program.

The interim period until Shahrivar 1341 and the Third Five Year Plan period until Esfand 1346, therefore, call only for continuation of the present program being pursued by the Ministry.

2. Intestinal Infection

Intestinal infection due to organisms and to parasites is one of the most widespread of all types of disease within Iran. Its prevention, however, lies principally in the control of the environment, and in turn this control is largely a matter of personal and home hygiene. The control of food production, distribution and preparation to avoid contamination by human excreta is a parallel attack. Widespread as these diseases are, much preparation must be made before an effective control of the environment will be possible. Consequently, the program for this is delayed to coincide with the development of personal hygiene and food control programs in the division of Environmental Sanitation. These programs begin in the period of the Third Five-Year Plan.

3. Bilharziasis

This disease is found only in Khuzistan and although not too prevalent at the present time still in an area of 3,000 sq. km. where more than 100,000 people live, from 35,000 to 45,000 people are found to be infected. The disease is not evenly distributed and one can find in some of the villages sometimes up to 90% of the people infected with the disease. The average infection rate is 37%.

The studies made by the Institute of Parasitology and Malariology have recorded the presence of disease in 78 villages in 7 foci distributed from the north part of the Khuzistan plain drawn to Khorramshahr. It is associated with the irrigation channels or pumping stations. However, it may become a major health problem as new irrigation projects are developed specially in the south-west of Iran. No certain plan has yet been developed for its control. Knowledge of the habit of the snail host is not yet complete and study is underway on a small scale by the Institute of Parasitology and Malariology. Further studies are necessary for classification of the various aspects of epidemiology, malacology and control of the disease. The present objective is the development of a research project in coordination with other agencies involved and interested in the problem. On the basis of the findings of these studies the development of a control program can be logically followed.

A Project Agreement has already been signed between the Ministry of the Health and WHO for the organization of study and Pilot Project on Bilharziasis in Khuzistah. For the implementation of this project another three partite agreement has been signed between the Ministry of Health, Plan Organization and Near East Foundation, the latter offering its administrative support to the program.

Technically the Program is going to be implemented by the Institute of Parasitology and Malariology. Research will be continued between the period of Farvardin 1340-Shahrivar 1341 and this program will be developed as far as possible. In the period of Third Five Year Plan from Mehr 1341-Esfand 1346 research studies will be continued and as a result of these research studies as the problem grows a control program will be developed.

4. Brucellosis

The incidence of this disease is not clear but it is probably widespread. Since it is one of the chronic debilitating disease, it becomes a prominent public health problem.

The situation in the control of this disease is similar to that of bilharziasis. It is necessary to do a coordinated research program, again with the Ministry of Agriculture, in the epidemiology and control of the disease. Following this, a system of controls can be established. The start of this program will be delayed until the beginning of the Third Five-Year Plan.

Allocations

1340-41	
a) Maintenance	20,000,000 Rls.
1340-46	
a) Maintenance	
b) Development	
1 - For Pilot Studies on Bilharziasis control	500,000 Rls.
2 - For bilharziasis control, cost depends upon result of Pilot studies. Estimated need for a control project	100,000,000 Rls.

NOTE:

It is expected that of the total sum necessary, about Rls.15,000,000 be supplied by the International Agencies or Near East Foundation as a contribution to the program.

Rls. 171,500,000

For Brucellosis

Facil - Grants	380,000 x 5.5	2,090,000

Rls. 173,590,000

7 h. QUARANTINE

(a) Background Information

An adequate efficient quarantine control at the ports of entry into the country is an essential part of the communicable disease control of Iran.

Statistics

It is hard to prove the value of a quarantine service statistically. One can show the number of cases detained because of inadequate vaccination certificates or because of beginning communicable disease. It is always difficult to show, however, that the efforts thus expended specifically prevented an epidemic. Nevertheless, it can be presumed that without such control, the chances of widespread epidemics would be vastly increased. There are many instances to show where failure to stop the entry of persons known to be carrying disease has permitted the beginning of epidemics.

Progress to Date

The border and quarantine service is traditionally an old one, but only relatively recently has it been well organized with the technical backstopping of a division in the Public Health Department and a uniformed corps of trained inspectors.

Present Problems

The particular problems as pointed out in this report are those common to a service which needs expansion and improvement throughout its entire body. The corps needed better training. The posts are in disrepair and ill-designed for the purposes to which they are put, legal support is inadequate, there is little in the way of standard operating procedures or regulations for guides for the inspectors, and financial support is insufficient.

(b) Policy and Strategy

The goal of any quarantine service is to prevent the entry of communicable disease into the country. The improvement of the service in recent times indicates a general approach in tightening regulations and increasing effectiveness throughout. In short, the general policy is to bring into the corps through many differing improvements an increased morale and efficiency.

(c) Specific Targets and Policies

This end is to be gained through the following specific targets:

1. Development of a Quarantine Section and Corps within the Ministry.
2. Enactment of law authorizing the Corps and delegating to the Ministry the right to establish regulations.
3. Development of a manual of regulations.
4. Development of in-service training for members of the section and corps.
5. Development of adequate standard operating procedures for the corps.
6. Development of improved facilities, at center, five regional units and 17 border posts.
7. Through the Ministry of Foreign Affairs, development of bi-lateral negotiations with bordering countries on mutual problems of border quarantine.

(d) ALLOCATIONS

1340-41		
a. Maintenance		
6,500,000 x 0.9 x 1.6 =		9,360,000
b. Development		
(1) for manual of regulations		
Facil	200,000	9,560,000
1341-46		
a. Maintenance		
9,360,000 x 2/3 x 0.9 x 6.62 =		37,177,920
b. Development		
Center	24,107,646	
Five regional medical units	17,468,900	
Seventeen border units	83,413,169	
	124,989,715	124,989,715

8. PROVISION OF SERVICES FOR GROUPS OF PEOPLE WITH SPECIAL HEALTH NEEDS

1340-41

a. Maintenance

b. Development

(1) For Central Office

Pers	=	Dept. Dir	30	
		Dpty "	20	
		Div "	20	
		2 Secy	16	
			86 x 12	1,032,000
Facil	=	Office Equip =		15,000
Opns	=	30% of Pers =		309,600

(2) Totals

Pers	=	1.6 x 1,032,000 =	1,651,200	
Facil	=		15,000	
Opns	=	1.6 x 309,600 =	495,360	
			2,161,560	2,161,560

1341-46

a. Maintenance 2,146,560 x 2/3 x 0.9 x 6.62	8,526,136
b. Development	----
	8,526,136

8. Provision of Services for Groups of People With Special Health Needs

Maternal and Child Health

(a) Background Information

General Background: Maternal and Child Health Service is an essential, integrated program closely associated with preventive medicine and nursing in the general field of public health. The program is designed to reduce the maternal and infant mortality, and to secure the health of the next generation through pre-and-post-natal clinics, well-baby clinics, school health services, and education. Services during a pregnancy and the childhood period have a return far beyond their specific content. They reach the family at a particularly receptive time, a period when health is uppermost in the minds of all members of the group, when motivation to more healthful ways of living is high. It is equally true, however, that until certain progress has been made in the control of general public health problems, specific measures directed toward maternal and child health will not be effective.

Statistics: With some fairly broad statistical assumptions (birth rate 50/1,000, infant mortality 200/1,000, live births and general death rate 16/1,000, population being 20,000,000) approximately 1,000,000 births occur yearly in Iran. This produces an average rate of increase of the population of 3%*. Out of the 1,000,000 births, 600,000 survive the period of infancy. But with life expectancy at birth estimated at 35-40 years, the mortality rate for the first decade must be high.

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* This assumption is not used elsewhere. The assumed rate is 2½%.

There is no statistical break-down as to causes of death by ages, but the infections, particularly intestinal and respiratory, must account for a large share of the infant and childhood deaths. More accurate figures will be available from the proposed health survey. Maternal mortality rates are not accurate.

Progress to Date: Without comparative statistics over a period of years it is not possible to assess progress. It must be noted, however, that where there are good health services, such as in the leading hospitals and clinics, that the survival rates appear to be steadily improving. Certainly, great effort is being made to develop a maternal and infant service that reaches out into the villages. There are 35 Mothers and Children's Health Centers throughout the country, 11 in Ostan capitals, 12 in other large Ostan cities, and 12 in the rural districts. The Farmanfarmaian Clinic in Tehran presents a model center for research and training. UNICEF supports a milk-distribution program. The Ministry of Education supports a modest school health program, which, however, does not emphasize the preventive aspects of health. One midwifery school for graduate nurses and one for the training of behyar (rural) midwives are in operation. There are some courses of training in the Ostan for the untrained midwife. The specialist obstetrician is, for the most part, still trained abroad.

Problems at Present: A major problem is that there is no statistical basis upon which to build programs and determine their effectiveness. The shortage of trained nurse-midwives and the inefficient manner in which those available are used rob the country of the professional care that mothers and children need. Too much reliance is placed upon the untrained midwife. This untrained midwife may be used very well, but there is at present too little supervision of her work by trained professionals. Too few of the total number of pregnant women avail themselves of the advantage of the clinics and dispensaries; many are unable to do so because of distance between home and clinic. Acceptance of the idea of prevention in child care is slow also. Poor nutrition is apparent.

(b) Policy and Strategy

The goal is a multiple one: to set the standards in maintenance of care for mothers and children, to assist in establishing centers to meet the needs of the rural populace, to control the untrained midwife, and to coordinate the program with other agencies involved in maternal and child welfare in order to utilize fully all available resources. It is essential that the maternal and child health services be fully integrated into the public health program in general, and that they operate under the supervision of the Ostan Health Offices. School Health, though pertinent to a period spent in the school, is part of the continuing health coverage from pregnancy to adulthood. In developing a service that will reach all people in Iran, the general-purpose clinic and health center will be used for maternal and child health work, under proper specialized supervision. As in so many, if not all, of the fields of public and curative health practice, health education will play a major part.

(c) Objectives and Targets

These are:

(a) Raising the standard of care by improving the present services through better prepared personnel, closer supervision and utilization of health education.

(b) Development of the school health program as a preventive rather than a curative service by encouraging the parents to utilize private physicians or government services for any curative or rehabilitative care necessary for their children.

(c) Training of teachers in school health in order to recognize symptoms of communicable diseases or minor defects in children and what course of action to take.

(d) Registration of practicing, untrained midwives with the Ostan Health Office and close supervision of their activities.

(e) Establishment of maternal and child health services where rural dispensaries or health centers are being built and completed.

(f) Transfer to Mothers and Childrens' Protection Bongah responsibility for operating maternal and child health services.

(g) Development of home delivery services where needed.

(h) Completion of background statistical survey in maternal and child health, and development of a continuing organized survey - both in association with the Health Survey of the Office of Statistics and Epidemiology.

(d) Allocations.

For description of MCH facilities and staffing see:

6. Provision of health facilities
10. Provision of Support Services for Health Activities
    (a) nursing
11. Provision of Training Facilities for Health Personnel
    (b) Nurses

For Allocations see over.

8. Provision of Services for Groups of People with Special Health Needs

a. Maternal and Child Health Services.

(d) Allocations

1340-41

a. Maintenance 48,000,000 x 0.9 x 1.6 =	69,120,000

1341-46

a. Maintenance 69,120,000 x 2/3 x 0.9 x 6.62 =	274,544,640
b. Development 5 x 5,000,000 =	25,000,000
	299,544,640

8 b. CHRONIC DISEASE, GERIATRIC CARE AND REHABILITATION

(a) Background Information

Iran, with a life expectancy variously placed between 35 and 45 years, has a relatively young population. There is, however, a great deal of chronic disease. Figures with accuracy are not available, but it is abundantly apparent from the hospital wards and the streets that much long-term disease exists. Undoubtedly there is an excess of chronic liver disease following the heavy intestinal infections and parasitism. Chronic skeletal disease is widespread.

Chronic disease is not necessarily a characteristic disease of old people. It is true that an older population suffers more from chronic disease than a population with lower life expectancy. Nevertheless, chronic disease takes great toll of human well being and productivity throughout life. The problems of the aged population in turn go much beyond mere chronic disease, involving emotional, social, and economic aspects. Rehabilitation is a necessary corollary to both chronic disease and old age, for it helps restore a life to usefulness. Except for certain specific chronic disease no special program has been developed.

(b) Policy and Strategy

This is a new service, and because of other priorities progress in the Third Plan cannot be rapid. The goal is to return to full health and productivity as many as possible of the sufferers from chronic disease and to provide specialized health services for the aged.

Problems in this area may become worse with greater urbanization and reduction of family ties, so that present family responsibility and home care of older members may not be available, but it is unlikely that they will approach the situation in Western countries.

(c) Objectives and Targets

It is expected that the goals will be reached through these specific actions:

1. Study of the incidence and trend of chronic disease in Iran.
2. In association with the Division of Social Services study the problem of the aged.
3. Develop a Section of Chronic Disease and Geriatrics within the Ministry.
4. Develop special facilities for the care of chronic disease and of the aged.

The Nour-Afshar estat at Jalalabad will be developed as a pilot project in rehabilitation.

8b. Chronic Disease, Geriatric Care, and Rehabilitation

(d) Allocations

1340-41

a. Maintenance	______
b. Development	______

1341-46

a. Maintenance	______
b. Development	
(1) For small central staff, for research and minor operation	6,000,000

8. Provision of Services for Groups of Persons with Special Health Needs

(C) MENTAL HEALTH SERVICES

(a) Background Information

In Iran, as in other countries, provision for the mentally ill and troubled has come late, long after bodily disease has been reduced through curative and preventive measures. There is accommodation for 2670 patients in mental hospitals. Since most of the patients are frankly psychotic, their number gives no good clue as to the total number of mentally ill in Iran. In other countries it has been estimated that one out of every ten persons has been mentally disturbed at some period of his life. Probably not more than one-tenth of these will require hospitalization.

There are seven major mental hospitals in Iran, with beds distributed as follows:

Tehran	1780
Mashhad	250
Esfahan	200
Hamadan	120
Tabriz	120
Shiraz	200

Total = 2670

Conditions in these hospitals are hardly to be considered satisfactory. Efforts are being made to improve the living situation and provide some form of treatment. Drugs are used to a very limited extent. Staffs are able to give fundamental care for physical ills and custodial treatment, which at least protects the patients from an impossible life outside the hospital.

The beginnings of a preventive mental hygiene program have been made. This so far has consisted largely of radio and television broadcasts sponsored by the new and small Division of Mental Health of the Department of Public Health of the Ministry. Specialized nurse training has been started.

The problems at present include lack of knowledge (though not interest), of mental health matters by the general public, the small number of trained professional personnel, insufficient budget, inadequacy of buildings, facilities and treatment, and, most of all, lack of a comprehensive, concerted program.

(b) Policies and Strategy

The goal of this activity is to provide modern therapy for the mentally ill with the hope of rehabilitation, and to apply the principles of prevention through a program of mental hygiene. In the hospital treatment of patients the newer drug therapy will be utilized in an effort to return as many patients as possible to family and community life. Rehabilitation will be the aim. If this program is successful, the need for long-term hospitalization would be reduced and restricted to those patients who do not respond to active therapy and cannot be released from custodial care.

The essence of the program will be the development of a prevention service through the widespread use of counseling in the existing health centers and clinics.

In the interests of better care and in view of the expense involved, the program will be operated through the Ministry's Division of Mental Health and all mental hospitals will be brought under the Ministry. The first step of the program will concentrate on improving present hospital facilities. If the programs of prevention and active therapy are successful, there may not be a great need for additional beds.

(c) Objectives and Targets

1. Study of the incidence of mental illness against the needs for control and the resources at hand.
2. Develop wide-ranging health education program, directed toward case finding and the theme of preventability.
3. Supervision of mental hospitals by the Division of Special Hospitalization.
4. Improvement of the present facilities in mental hospitals.
5. Development of a counseling service in mental hygiene in the clinics and health centers throughout the country.
6. Development of a system of financial aid to the budget of in-patients.

8c. Mental Health Service

(d) Allocations

1340-41

a. Maintenance

2,000,000 x 0.9 x 1.6 = 2,880,000

b. Development

(1) For Central Staff

Pers = Dir 20
Asst 15
2 Nurs 20
55 x 12 = 660,000

Facil = Off. Equip. = 22,500

Opns = 40% of Pers = 264,000

(2) Totals

Pers = 1.6 x 660,000 = 1,056,000

Facil = 22,500

Opns = 1.6 x 264,000 = 422,400

1,500,900

1,500,900

4,380,900

1341-46

a. Maintenance

4,358,400 x 2/3 x 0.9 x 6.62 = 17,311,685

b. Development

(1) For Education

Program

Facil = Film 5,000,000

Opns = Radio, etc. 5,000,000

(2) For supervision of mental health work in centers and clinics

Pers = 20
2 Nurs 20
Driv 8
48 x 12 = 576,000

Facil = 1 Jeep 200,000

Opns = Jeep 1,000,000 1,000,000

40% Pers 230,400

(3) For financial aid to patients = 25 136,875,000

(4) Totals

Pers = 6.62 x 576,000 3,813,120

Facil = 700,000

Opns =
1,000,000
230,000
136,875,000
138,105,000

138,105,000
142,118,120

142,118,120
159,519,685

8. PROVISION OF SERVICES FOR GROUPS OF PEOPLE WITH SPECIAL HEALTH NEEDS

(d) Dental Care

(a) Background Infromation. This ia a neglected though highly important aspect of the general health program. Nevertheless, in spite of the suffering it causes it is a project for later development since its success depends upon certain prerequisites which must be established, such as the basic level of nutrition.

Services to date are purely reparative. The main problem is that prevention of dental disease is undoubtedly the touchstone and this rests on so many other factors not yet accomplished in the health program.

(b) Policy and Strategy. If the goal is to provide curative and preventive services in the promotion of improved dental health, the program must be broad in concept. Because of the effect upon dental health of other health factors, close coordination of these programs is necessary. Thus, health education and nutrition programs will be as important to dental health as its own projects.

(c) Objectives and Targets

These are:

a. Development of a community dental health program.

b. Assignment of reparative dental services to agencies operating curative facilities.

c. Development of preventive dental service in health centers.

d. Coordination with School Health, Health Education, and Nutrition programs in developing dental health education for school children.

e. Development of a continuing in-service training program for dentists in preventive aspects of dental health.

f. Development of a Dental Health Section in the Ministry.

g. Development of an Iran Dental Society.

(d) Allocations

1340-41

a. Maintenance

b. Development

1341-46

a. Maintenance

b. Development

(1) For small central office and research activities 4,000,000

8. PROVISION OF SERVICES FOR GROUPS OF PERSONS WITH SPECIAL HEALTH NEEDS

(e) Drug Addiction and Alcoholism Control

(a) Background Information

Up to the present, the major problem of drug addiction in Iran has been the use of narcotics; alcoholism and other forms of addiction have not been of major concern.

Prior to efforts at government control, opium was grown extensively and was one of the major cash crops. After many attempts at control, during which trade in opium became a Government monopoly, the use of opium other than for medical reasons was outlawed in 1954. Since that time the Law has been enforced with increasing vigour.

Before the most recent control laws, it is estimated that approximately 40% of the adult male population smoked opium. The percentage now smoking is not known but there is no question that it continues to be used illegally in the urban areas and in the villages as well. But unquestionably the use has drastically decreased. There is indirect evidence of this in the appearance of the people in the streets in the cities and in the increased vigour of the farmers and labourers. There is hope that the illegal use of opium can be reduced to an absolute minimum.

Smuggling still occurs from neighbouring countries, particularly Afghanistan and Turkey, but the growing of the poppy illegally appears to have been reduced to a minimum, sugar beet having been substituted as a replacement cash crop.

There is still need for developing facilities to care for chronic addiction, and as the final approach is made to complete control measures used must be intensified. As yet no other major problem in addiction, including alcoholism, has presented itself.

(b) Strategy and Policy

The control of addiction has now reached a point in Iran at which two distinct elements emerge. On the one hand, strict enforcement of laws is required. On the other, however, certain distinct medical problems emerge. While the impetus for the entire program has remained largely with the health officials, a division of responsibility will now be assumed. The Ministry of Health will gradually withdraw from the enforcement of the narcotics control, transferring such responsibility to the national and local enforcement agencies. The Ministry of Health, however, will retain responsibility for both preventive and curative aspects of the purely medical care of addiction of all types. The agencies largely responsible for this will be the Drug Addiction Control Organization of the Ministry of Health, the National Police, The Imperial Iranian Gendarmerie, & the Border Officials.

(c) Objectives & Targets

Specifically, the program of the Ministry of Health will include the development of treatment services, centralized throughout the Ostans for the present, conducting an intensified health education program, developing in-service training programs for officials of the Ostan hospitals and, ultimately, developing a research & treatment center for the entire country/in one centralized facility

Specific targets follow:

1. Transfer of enforcement responsibilities to national enforcement agencies.
2. Development of treatment services.

3. Development of an in-service training program for key medical care personnel.

4. Establishment of a drug addiction organization as a temporary organization.

5. Development of continuing research studies in addiction.

6. Development of a continuing health education program for addiction control.

7. Development of a centralized treatment facility.

8. Study of addiction control legislation with a view to necessary modification.

(d) Allocations

1340-41

a. Maintenance
100,000 x 0.9 x 1.6 144,000

b. Development
(1) For Central Office
Pers = Dir 20
2 Ch Sct 30
Secy 8
58 x 12 = 696,000

Facil = Offce equip 10,000
Opns = 20% of Pers = 208,800

(2) Totals
Pers = 1.6 x 696,000 = 1,113,600
Facil = 10,000
Opns = 1.6 x 208,800 334,080
1,457,680

1,457,680
1,601,680

1341-46

a. Maintenance
1,591,680 x 2/3 x 0.9 x 6.62 = 6,322,153

b. Development
(1) For education program 5,000,000

(2) For in-service training

Pers MD 20
Secy 8
28 x 12 = 336,000

Facil = Training aids) Office equip) 10,000

Opns = 30% of Pers 100,800

(3) For research grants 500,000

(4) Totals

Pers = 6.62 x 336,000 = 2,224,320
Facil = 10,000
Opns = 5,000,000
100,800
500,000
6.62 x 5,600,800 37,677,296
39,911,616

39,911,616
46,233,769

8f. Industrial Health, Disaster and Accident Control

(a) Background Information

With the increasingly industrialized and mechanized way of life in Iran, theproblem of accident control will increase also. Closely akin, though not restricted alone to accidents, is the matter of industrial health. Finally it is likely that natural disasters will occur as they have in the past. There is no longer need for a purely fatalistic attitude toward such events. Accidents can be prevented, workers' health can be improved to the advantage of all, and the effects of disasters can be mitigated.

Progress to date. There is no advance training or sound preparation for meeting disasters. No organized plan or clear cut authority exists. Labor laws pay some attention to safety factors but these are not enforced. Some progress is being made in traffic control.

(b) Policy and Strategy

Through education and control programs the goal is a reduction of accidents to a minimum, improvement in workers' health, and to establish a continuing service for meeting unforeseen natural disasters. Fundamental to this concept of a goal is the conviction that control is possible in these areas.

(c) **Objectives and Targets**

These are:

1. Establishment of a Section of Industrial Health, Disaster and Accident Control in the Ministry.
2. Development of wide liaison with all agencies, industrial and military.
3. Establishment of safety programs in industry and transportation.
4. Establishment of Disaster Control Centers in all Ostans.

8. Provision of Service for Groups of People With Special Health Needs

f. Industrial Health Disaster and Accident Control

(d) Allocations

Tentative allocation of Rls.6 million for the Third Plan period.

8. PROVISION OF SERVICES FOR GROUPS OF PEOPLE WITH SPECIAL HEALTH NEEDS

g. Military Medical Care

a. Background Information

Care of the uniformed forces of the nation has specific requirements. On the other hand, much of military medical care is no different from civilian requirements. When financial and manpower resources are limited, it is wasteful and unnecessary to provide entirely separate and duplicate services. Furthermore, the importance of prevention of disease and injury applies equally to both civilian and uniformed personnel. In the interest of good care and efficiency, much of the military medical system can be designed to serve civilians as well, and many civilian installations can assist in the care of uniformed personnel.

There is already a considerable degree of cooperation among civilian and military units. Already accident patients, civilian and military, are sent to the Army Hospitals in Tehran. In the border areas the Gendermarie dispensaries and hospitals accept non-military civilians.

b. Policy and Strategy

The goal of such a program is to provide a service for military personnel, both curative and preventive, which will meet both specific and general medical requirements through a program of integrated military and civilian services. A close coordination can be developed between military and civilian plans. The specific requirements of the military, of course, will be the responsibility of the uniformed services. Civilian medical personnel and facilities will be available on a consultative, contract or cooperative basis for assistance to the military.

c. Objectives and Targets

These Are:

(a) Development of a permanent liaison committe through the Royal Council for Health with the Surgeons General of the Uniformed Services.

(b) Study and development of a plan for coordinated military-civilian services.

(c) Development of a coordinated military-civilian service.

(d) Development of a military medical post-graduate institution.

8. Provision of Service for Groups of People with Special Health Needs

(d) Allocations

g. Military Medical Care

Budget with the uniformed forces.

IX. Provision of Laboratory Services

(a) Background Information

The laboratory service is an essential, integrated part of the combined curative and preventive health facility. A central laboratory exists, however, to meet the need for a focus on standards determination, performance of unusual of complicated tests, teaching and research. Laboratory work has grown appreciably. In 1335 there were 147,000 tests performed throughout the country, while in 1339 the number was 1,500,000. Sixty-eight technicians, 133 aids, and six other experts have been trained in special courses in the Central Laboratory.

(b) Policy and Strategy

The Central Tehran Laboratories will be essentially engaged in research, assay, standards development, calibration of standards for electrical laboratory equipment, etc.

All Ostan Capitals will have one well-developed public health laboratory equipped to do parasitology, hematology, bacteriology and serology. In additon, and according to need, they will also supply a central laboratory service for all health centers, dispensaries and hospitals not served by a laboratory.

All acute general hospitals over 100 beds will have a laboratory providing bacteriology, hematology and chemistry on a 24-hour call basis. All hospitals under 100 beds and over 50 engaging in surgery will have a clinical laboratory providing the minimum diagnostic services in hematology and chemistry. All hospitals and health center dispensaries will provide minimum laboratory services including diagnostic blood counts, urinalysis, and simple bacteriology for determination of diphtheria, typhoid, tuberculosis. Specific programs or arrangements will be made for all other needed services.

(c) Objectives and Targets

1. Development of Tehran Central Laboratory
2. Development of a tissue diagnostic service
3. Development of virus and tissue culture laboratory services in association with the Pasteur and Razi Institutes.
4. Development of ten Ostan Central Laboratories
5. Development of in-service training programs for laboratories' workers of all echelons
6. Development of a hospital consultation service for developing integrated hospital laboratories.

9. **Provision of Laboratory Services**

Allocations

1340-41

a. Maintenance 21,000,000 x 0.9 x 1.6		30,240,000

1341-46

a. Maintenance		
b. Development		
(1) For Ostan Labs. Persons -	38,277,360	
(2) Facility -	760,000	
(3) Operations -	11,472,208	
	50,509,560	

X. PROVISION OF SUPPORT SERVICES FOR HEALTH ACTIVITIES

(a) Nursing: A Ten Year Program

a. Background Information

Nursing makes a most important contribution to the prevention of disease, care and rehabilitation of the sick. But until 1948 it had a low status in Iran because of the inadequate preparation, lack of basic education and inferior position of women. For most purposes the sick were cared for by a member of the family or by illiterate servants, and because of the inadequate number of nurses this situation still exists in many parts of Iran today.

The first attempts at nurse training go back 40 years, but serious nurse training began only in the 1940's. After World War II a number of young Iranian women went to England to study nursing. Then in 1948 the first modern professional nursing school opened in Tehran with a team of foreign nurses. Since then six more schools have developed, all with foreign faculty. Practical nurse (behyar) training began in the early 1950's. A nursing section was established in the Department of Public Health in 1952.

In May 1958, the High Council of Education approved a constitution establishing 3-year professional schools of nursing (parastar) with twelfth grade entrance requirements and 2-year practical nurse (behyar) schools with ninth grade entrance requirements. The Behyari Schools offer a choice in the second year to prepare as a hospital nurse, a rural midwife or a public health nurse. There are now 7 professional schools with 638 students, and 9 behyari schools with 264 students.

There are at present in the country 1640 nurses & 1000 behyars.

The main problems or bottlenecks in the progress of the nursing program are:

1. A critical shortage of qualified nursing personnel (professional and practical nurses)

2. Lack of schools, nursing faculty, clinical supervisors and clinical facilities to prepare these personnel.

3. Lack of provision to prepare faculty and supervisors, except on the job training

4. Lack of text books and visual aids in the language of the country

5. Adequate distribution and utilization of prepared personnel is prevented by the obligation of the student to the agency responsible for the training

6. Lack of appreciation and understanding by medical profession and public in regard to utilization and potential value of well-prepared nursing personnel.

7. Unwillingness of prepared young women to leave their home to work in other areas of the country due to lack of housing facilities and unreceptive communities who are bound by customs.

8. Providing in-service training for nurses' aides is complicated by the fact that many are illiterate and uninterested and cannot be replaced until their retirement. Funds necessary for their retirement also prevents replacement for 2/3 of them.

b. Policy and Strategy

The following will be the function of the various categories of prepared nursing personnel:

- The PROFESSIONAL NURSE will be used essentially as teacher, supervisor or administrator in either a nursing school, clinical or public health facility.

- the PRACTICAL NURSE (BEHYAR) will be used for bedside care in a hospital, or service in a public health facility or rural dispensary, or as a rural midwife in a village with less than 10,000 population under the supervision of health clinics in Bakhsh Center.

- The NURSES' AIDE will augment any of these services by performing duties of a non-professional nature under supervision of a professional or practical nurse, and will be given intensive in-service training in order to perform her duties.

Two areas of nursing specialization deserve notice:

MIDWIFERY: The key individuals are the nurse - and behyar midwives. They are nurse specialists, midwifery training being given after their regular nursing and behyar studies.

PUBLIC HEALTH: The Public Health Nurse first has full nursing training and experience. She is then given additional training in public health. Training for behyars doing public health work will be given on the job.

The policy will be to provide a modest and realistic nursing staff ratio for the country over a period of 10 years on the following basis, assuming 22,000 hospital beds available:

- 1 professional nurse per 8 beds
  (3 for each 25-bed unit)
- 1 behyar per 6 beds
  (4 for each 25-bed unit)
- 1 nurses' aide per 3 beds
  (8 for each 25-bed unit)

On this basis, by 1351 there should be about 4,500 professional nurses and 3,000 behyars.

c. Objectives and Targets

1. It is estimated that within the 10 year period (1341-51) in order to meet the minimum requirements for staffing in existing and completed hospitals, health facilities, schools of nursing and other, the following personnel will be needed: 4,700 professional nurses, 4,000 practical nurses, and 10,000 nurses aides.

2. To meet these requirements the Nemazee School of Nursing in Shiraz and the Jorjani School of Nursing in Meshed will be expanded during the 3rd 5-year plan (1341-46), in order to accommodate a total of 100 students each. The school of nursing in Kerman will also be in operation with a capacity for 48 students. In addition, during this period three practical schools for nursing will be in operation in Tabriz, Rasht and Hamadan with a combined output of 50 graduates per year. At the end of the first 5-year period it is estimated that the professional schools of nursing will produce 1,240 graduates and the practical schools 970.

3. During the second 5-year period (1346-51) there will be two additional professional schools established, one in Isfahan and one in Rasht with a yearly output of 50 graduates. Also four more practical schools of nursing will be established. These are to be located in Zahedan, Sanandaj, Rezaiyeh, and Ahwaz with a combined yearly output of 80 graduates. At the end of the Second Five Year period, it is estimated that there will be an additional 1510 professional nurses, and 1220 practical nurses.

4. Between 1341-46 there will be a post-graudate school in midwifery established at the Universities of Meshed and Tabriz.

During the second five year plan (1346-51) additional schools will be established in Shiraz and Isfahan.

5. During the next two years (1340-42) the nursing faculty in the existing schools will be strengthened through on the job training and planned workshops. A few foreign scholarships will be offered to those who qualify.
6. Faculty for the new schools will be carefully selected and assisted by foreign advisors until they are capable of complete responsibility. It is estimated that 6 nurses will be needed for faculty in the professional schools and 5 in the practical schools. This will allow faculty members to be absent on duty leave without disturbing the functioning of the schools (1341-51). At least 15 foreign scholarships will be necessary during each of the five year periods.
7. During the second five year period academic preparation for graduate nurses should be established, preferably in a University. This would eliminate the number of foreign scholarships necessary each year and it would also eliminate the need for foreign adivsors, except perhaps on a regional basis. (1346-51)
8. During the first 5-year period(1341-46) standards for schools of nursing & clinical practice areas should be established.
9. Within the first 5-year period(1341-46) there should be legislation enacted to require registration and licensing of nursing personnel. This will provide the information necessary for proper distribution and utilization, and will protect the public against malpractice.
10. Between 1340-46 all of the ostans will be provided with a

qualified Chief Public Health nurse to administer the essential nursing programs. At least 3 of the ostans with teaching centers will be provided with a chief nurse who has had advanced preparation.

11. During the next ten years (1341-51) it is expected that the public health nursing staff in the various ostans will be increased by 50 nurses and 100 public health nurse aides. There should also be available 100 behyar midwives for the rural dispensaries. A certain stability of staff in the Ostan areas should result by preparing personnel who live in these areas.

12. During the last five year period (1346-51) there should be available an additional four Ostan Chief Nurses with advanced preparation to assist in the teaching centers.

13. Specialized nursing services as mental health, tuberculosis, midwifery, etc. can be expected to improve and expand with more nursing personnel becoming available. (1341-51)

d. Allocations

1340-41

a. Maintenance
18,011,334 x 0.9 x 1.6 = 25,936,321

b. Development
(1) For Central Office
Persons = NMW 15 x 12 = 180,000
Facility = 1 jeep 200,000
Operations = jeep 1,000,000
30% of Pers 54,000

(2) Totals
Persons = 1.6 x 180,000 = 288,000
Facility = 200,000
Operations = 1,054,000
1,542,000

1,542,000
27,478,321

1341-46

a. **Maintenance**
27,478,321 x2/3x0.9x6.62= 109,143,893

b. **Development**

(1) **For Central Office**

Persons= Tbc Ch 15
CD " 15
VD " 15
MH " 15
Secy 8
68 x 12 = 816,000

Facility= 1 jeep 200,000

Operations= jeep 1,000,000
30% persons 2,448,000

(2) **Ostan offices**

Persons= CH N 15
AsstN 10
25 x 12= 300,000

Facility =1 jeep 200,000

Operations=40% persons 120,000
jeep = 1,000,000

(3) **Totals**

Persons= 816,000
x 10 3,000,000
6.62x 3,816,000 = 25,261,920

Facility= 200,000
x10 2,000,000
2,200,000 = 2,200,000

Operations = 2,448,000
Jeeps 1,000,000
10,000,000
6.62 x 13,448,000 = 89.025.760

116,487,680

225,631,573

X. PROVISION OF SUPPORT SERVICES FOR HEALTH ACTIVITIES

(b) Social Service

a. Background Information

The medical social worker occupies a permanent and important place in both curative and preventive health programs. She will be valuable in supplementing the physician and nurse in Iran, but because of the small extent of social services upon which she can rely this new service will grow slowly. Training is in the hands of the Tehran School of Social Work. This institution does not give courses equivalent to degree courses elsewhere, but this is a pioneering effort designed to meet the present needs of the country. The Division of Social Service of the Ministry is two years old. It has a staff of five who work at the main office and in four medical centers in Tehran; in the latter, case-work is being developed.

b. Policy and Strategy

The goal of the Ministry is to provide leadership in developing social work services in hospitals, clinics, dispensaries, and health centers. Acceptance of this new service will come slowly through demonstration of its value. This program will endeavour a) to determine the social, emotional and medical needs of the patient and seek means of fulfilling the needs, b) explain the needs to the executive authorities, c) cooperate in planning new activities & d) develope a system of financial aid to in-patients and their families.

c. Objectives & Targets

i) Development of a central office for technical support of field social workers.
ii) Development of specialized social work support for particular problems
iii) Development of field social service staff
iv) Development of in-service training for staff.

d. **Allocations**

1341-46

a. Maintenance
1,832,089 x 2/3 x 0.9 x 6.62 = 72,771,012

b. Development
(1) For central office
Pers = 3 Sec. Ch 45
Ch. Div. 15
60 x 12 = 720,000

Facil = 1 jeep, etc. 210,000

Opns = Jeep & office equip. 1,000,000

(2) Totals
Pers = 720,000 x 6.62 = 4,766,400
Facil 210,000
Opns 1,000,000
5,976,400 5,976,400
78,747,412

X. PROVISION OF SUPPORT SERVICES FOR HEALTH ACTIVITIES

c. Nutrition

a. Background Information

The general standard of nutrition is low in Iran. This is partly a problem of poverty, and can only be relieved as the standard of living rises, but partly a problem of lack of khowledge. Good nutrition obviously is greatly dependent upon the social customs and the economic status of the people. Education will play a major role, and the economic resources of the country must be adjusted to provide additional quantity and better quality of foods.

Some work has been done. A National Nutrition Council has been organized and a physician has been specially trained abroad in nutrition. A Division of Nutrition has been recently organized in the Ministry of Health; its Director also acts as secretary of the Nutrition Council. An FAO consultant is in Iran and is working with the Ministries of Agriculture and Health. The UNICEF Milk Program for mothers and babies has been continuing for some years.

Not only are incomes low, but people are not conscious of the need for better diet. Education is needed, but this program would be useless unless the aims of the Agriculture Program are a success.

b. Policy and Strategy: The general attack on the nutrition problem will be twofold; first, a wide range program of health education concentrating on nutrition, and working through such avenues as fundamental education and the dehyar service; the second, collaboration between the Ministry of Agriculture & the Ministry of Health to see that the expanding agricultural production results in a better food supply for peasants & townspeople alike.

c. **Objectives and Targets**

i) Collation and evaluation of data from previous surveys.

ii) Study of needs for further survey.

iii) Development of plan for improving nutritional status of the people, in collaboration with the Ministry of Agriculture.

iv) Development of central technical and field staff.

v) Development of a Nutrition Council.

d. **Allocations**

1341-46

Tentative allocation of 5 million
rials each year
for five years   5 x 5,000,000 = 25,000,000

X. PROVISION OF SUPPORT SERVICES FOR HEALTH ACTIVITIES

(d) Administrative Services

a. Background Information

The Ministry of Health has developed a traditionally centralized administrative service of low efficiency. Budgeting practices are not good, despite recent changes.

b. Policy and Strategy

The goal is to provide efficient support through administrative service to the Ministry of Health. Setting of policy in general and supervision of standards should remain a central function, but deterioration is the key to an efficient countrywide health service.

c. Objectives and Targets

These are:

i) Development of a functional organization for the Ministry of Health, with delegation of responsibility and lines of authority clearly stated.

ii) Development of a personnel system which establishes grades in relation to the position.

iii) Development of a functional budget which originates at the operating level.

iv) Development of a simplified fiscal system which provides for allocations in relation to the budget and payments in relation to allocations.

v) Development of supply and property control apart from the fiscal offices.

vi) Development of an efficient multi-purpose transportation system.

10. Provision of Support Services for Health Activities

d. Administrative Services

1340-41

a. Maintenance 600,000,000 x 0.9 x 1.6 =	864,000,000
b. Development	---
	864,000,000

1341-46

a. Maintenance 864,000,000 x 2.3 x 0.9 x 6.62 =	3,431,808,000
b. Development	---
	3,431,808,000

XI. PROVISION OF TRAINING FACILITIES FOR HEALTH PERSONNEL

1. Introduction

General. The lack of well-trained personnel is perhaps the major deficiency in the health service at the present time. Although almost all categories of workers are in short supply, nurses and behyars are in critical shortage. Facilities for training all groups of professional personnel are available in Iran, though many will require expansion. With careful planning and gradual development of faculties and facilities sufficient trained personnel can be supplied to reach maintenance levels within the next 15-20 years. As the training program develops graduate training and research both will require increasing attention. The entire program will fail, however, if quality is not built in; quantity of personnel alone will not answer the need.

Progress to Date. Tehran University Medical School is the oldest in the country. 350 students enter every year and 250 to 300 graduate. The five provincial university medical schools have much less capacity:

Ahwaz	50 in the entering class
Isfahan	60
Mehsed	50
Tabriz	70
Shiraz	50

There is much less loss in the number graduating from the provincial universities. Approximately 550-575 graduate in the country every year. In most of the schools the continental system of medical education prevails with emphasis on the lecture method in large groups. At Shiraz the small-group-seminar-bedside type of teaching is being introduced.

Seven schools of professional nursing give three-year training in Iran. They graduate students as follows:

Tehran	Princess Ashraf School	80
	Reza Shah Kabir School	46
Tabriz	University School	30
	Presbyterian Mission School	15
Mashad	Jorjani School	19
Shiraz	Nemazee School	18
Abadan	NIOC School	20

Seven schools for behyars operate in the following cities with the graduates as indicated:

Tehran	UNICEF School	20
	Farah School	40
	American Joint Distribution Committe School	7
Isfahan	Red Lion and Sun Society School	20
Ahwaz	NIOC School	12
Hamadan	Presbyterian Mission School	10
Shiraz	Saadi School	24

The Institute of Midwifery in Tehran graduates about 30 nurse-midwives yearly, and the Behyar Midwifery School of the

Red Lion and Sun Society Maternity Hospital in Shiraz trains approximately 12 behyar-midwives annually.

At present there is only one dental school in Iran, at the University of Tehran, graduating approximately 100 students yearly.

A School of Pharmacy at Tehran produces about 50 graduates every year. The supply of pharmacists in the country apparently far outweighs the demand. Many are working in laboratories and other fields.

The Laboratory technician is served by a 2-year course in Tehran with 20 graduates annually. The Malaria Institute and the Pasteur Institute as well as the Central Ministry of Health Laboratory all train technicians in general and specific phases of laboratory work. According to the latest manpower census sufficient technicians are at work to meet the demand.

There is no training specifically designed for sanitary engineers within Iran. Those practising in that field are on-the-job trained with basic education in one of the other engineering disciplines, civil, mechanical, electrical, agricultural. Foreign scholarships have provided special training for a few. Sanitarians and sanitarian aid training does exist. The Palasht School has graduated an average of 50 sanitarians a year for the last ten years. Most of these students have worked in the rural areas and smaller communities after graduation.

Health Educators have only overseas study for advanced training, although the Health Education Division of the Ministry gives in-service training at the aid level to young candidates.

The Tehran School of Social Work now graduates about 15 students yearly. The training has been extended recently, but the matriculants are of 12th grade education. This does not supply the equivalent of the professional social worker but it does provide a much needed group who can perform well under supervision.

Hospital Administration is taught, and has been for the last five years, in the University of Tehran under the auspices of the Public Health Division of USOM advisory services. This year the teaching is being handled entirely by the Iranian staff, and the course, hopefully, will be accepted now under University regulations as part of the official curriculum. About 210 have been graduated thus far and the yearly enrollment is now 40.

There appears to be very little or no teaching of the lay general public in first aid and general hygiene, though the Health Education Division is active in supporting some of the Ostan Health Offices and certain of the specific projects of the Ministry program.

Quite an extensive foreign scholarship program has been developed during the last ten years. World Health Organization, Central Treaty Organization, and Point IV have all contributed. Many other individuals have supported their own foreign studies. Approximately 20 of these scholarships are now available yearly in all fields of public health and preventive medicine, though not primarily for clinical study. Point IV sponsored traineeships at the American University of Beirut provide, however, for basic nurse education. Approximately 20 fellowships in all areas of public health are available at American University of Beirut through Point IV every year. One of the problems in foreign study is the failure of the scholars to return to work in Iran. Unquestionably as the advantages of developing schools and hospitals in Iran become apparent more will return.

Present problems

At present there are insufficient facilities to support a full health personnel training program designed to provide trained workers in numbers necessary to meet the needs of the increasing population. Facilities in many instances are available, but need renovation or rescue from other uses to which they have been put. Some new construction is necessary. All of the provincial medical schools will need expansion. The behyari facilities particularly are insufficient for training numbers needed. Teaching hospitals run by the universities are too few for good bedside teaching.

The faculties of all schools suffer from the part time system. While many of the faculty of any school should and always will be part time, the responsible professors and a fair number of the associate professors need the freedom that full time tenure provides in order to give their whole energies to their teaching.

Unequal distribution of professional workers leads to inefficiency in health services in any country. Tehran for one reason or another siphons off a disproportionate share of trained personnel. Part of the answer lies in making the provincial areas more attractive.

As long as there is over-centralization of direction of the provincial universities development of the peripheral schools as attractive to the better trained professionals will be difficult. The Ostan schools need freedom to grow in their own ways, stimulated by competition among themselves.

The large classes now admitted by the Tehran University Medical School do not permit individualized or small group teaching. Laboratory methods of instruction are extremely difficult under these circumstances. In fact, there is even in the smaller universities too little emphasis on the laboratory phase of medical training. It is only fair to say that this does not apply to all of the provincial schools. Closely allied is the fundamental approach taken in the teaching of medicine and its associated disciplines. The large classes support the didactic method rather than the more intimate seminar, bedside, small group system.

Postgraduate training and research are both too little emphasized. No professional educational system can survive on its past alone, nor on the research of others. Unfortunately, the didactic system does not offer the sharp stimulus to individual work and original investigation that are essential to high quality and imaginative health services.

(b) Strategy and Policy

The education of health professionals will be closely coordinated to the need for their services through the Royal Council for Health. Under such a long term plan the facilities and faculties can be developed gradually and will lead within the next 20 years to a quality system producing the personnel needed.

The University of Tehran Medical School will reduce its entering class gradually to a maximum of 200, while the provincial universities will increase their quotas to 100 each as in this table:

	1342-46	1347-51	1352-56
Tehran	300	250	200
Shiraz	75	90	100
Isfahan	75	90	100
Ahwaz	75	90	100
Tabriz	75	90	100
Mashad	75	90	100
	675	700	700

Every effort will be made to cause Iranian physicians trained abroad to return to work in their home country.

Every effort will be made to reduce to a minimum the number of physicians who take professional training with no thought of subsequent work in the professional field or who leave it for other pursuits.

Every effort will be made to better the distribution of physicians and other health workers throughout the country.

Nurses will be trained for distinct areas of service. The professional nurse with three year training will be trained for supervisory and specialized positions primarily, the behyar for bedside care, and the nurses' aid through in-service facilities for routine care of an essentially non-professional nature. Later, after this basic training, more specialized teaching will be provided for the midwives, public health nurses, and the faculty nurse.

Graduate training within Iran or regionally will be fostered, especially for long-term development. A graduate department of community health and graduate divisions of other medical specialities will be planned and implemented.

The provision of foreign scholarships, however, for carefully selected candidates in chosen fields will be maintained. Hopefully, the international organizations will continue and enlarge this aspect of their programs.

An effort will be made to expand training into the rural areas making use of the smaller hospitals and health centers and clinics as valuable teaching facilities.

The following table shows the requirements of health personnel for the comprehensive integrated program anticipated:

Personnel Requirements

1340-41

		Required	Existing*	Needed*	+ 10%*
Nurses	General	3,814	1,896	1,918	2,108
	Public Health	383	90	293	302
	Midwife	561	120	441	453
	Faculty	87	87	-	9
	Tuberculosis	40	40	-	4
	Mental Health	12	12	-	1
	TOTAL:	4,897	2,245	2,652	2,877
Behyar	General	7,792	742	7,050	7,124
	Midwife	2,360	524	1,836	1,889
	Tuberculosis	240	240	-	24
	Mental Health	120	120	-	12
	TOTAL:	10,512	1,626	8,886	9,049
Physician	Comm. H'lth Service	3,700	3,700	-	-
	Public Health	232	59	173	179
	1/5000	4,280	6,612	-	661
Dentist	Comm. Health Service	380	380	-	38
	1/10000	2,140	1,242	898	1,022
Pharmacist		940	4,504	-	450
Laboratory	Technician	218)	5,275	-	528
	Aid	816)			
Environmental Sanitation	Engineer	132	50	82	87
	San. Aid	2,624	562	2,062	2,118
Health Education	Educator	15	5	10	11
	Aid	100	15	85	87
Social Service	Social Worker	12	3	9	10
	Aid	360	30	330	333
Hospital Administrator		460	360	100	136

(* at end of period)

Note: "+10%" is attrition factor, & equals number of personnel needed plus 10% of existing personnel.

Personnel Requirements

1342-46

		Required	Existing*	Needed*	+ 10%*
Nurses	General	4,136	2,507	1,629	1,880
	Public Health	387	190	197	16
	Midwife	565	380	185	213
	Faculty	403	103	-	10
	Tuberculosis	40	40	-	4
	Mental Health	12	12	-	1
	TOTAL:	5,643	3,232	2,011	2,114
Behyar	General	8,684	5,584	3,100	3,658
	Midwife	2,764	1,734	1,030	1,203
	Tuberculosis	240	240	-	24
	Mental Health	120	120	-	12
	TOTAL:	11,808	7,678	4,130	4,897
Physician	Community Health Service	4,310	4,310	-	-
	Public Health	234	105	129	140
	1/4000	5,925	9,837	-	992
Dentist	Community Health Service	382	382	-	-
	1/10000	2,375	1,992	383	583
Pharmacist		946	4,654	-	465
Laboratory	Technician	220)			
	Aid	820)	5,295	-	530
Environmental Sanitation	Engineer	132	75	57	65
	San. Aid	3,024	2,062	1,562	1,668
Health Education	Health Educator	15	8	7	8
	Aid	100	65	35	42
Social Service	Social Worker	12	8	4	5
	Aid	364	160	204	220
Hospital Administrator		464	510	-	51

(* At end of period)

Note: "+10%" is attrition factor, and equals number of personnel needed plus 10% of existing personnel.

(c) Objectives and Targets

a. Tehran University Medical School will reduce its student body and introduce a greater emphasis on laboratory and small group teaching. Provincial university medical schools will be expanded in all instances and will be given academic independence. An American-type medical educational system will be developed at Shiraz

b. A graduate department of community health will be developed at the Tehran University Medical School.

c. Graduate divisions and research studies will be developed in the various medical specialties and allied sciences.

d. The Nemazee and Jorjani Schools of Nursing will be expanded, and new schools will be developed at Kerman, Isfahan, and Rasht.

e. In cooperation with the Ministry of Education a course of academic training leading to a degree will be developed for faculty positions.

f. New behyari schools will be developed at the Mission and the University Hospitals in Isfahan, and in Tabriz, Rasht, Zahedan, Sanandaj, Rēzaieh, and Ahwaz.

g. A crash program for training behyars will be developed in the Shahrestan Health Centers in groups of 10 students and 3 faculty members for each of the 100 hospitals.

h. Training of pharmacists will continue as at present.

i. Training of laboratory technicians will continue as at present, though more emphasis will be placed upon the laboratory specialties.

j. Exploration of the development of a graduate course in sanitary engineering at the University of Tehran will continue, and such a course will be incorporated into the Department of Community Health when the latter is established.

k. The Palasht School will be expanded and the teaching of sanitarian aids will be developed at the Pahlavi University.

l. Health education in-service training will continue.

m. The Tehran School of Social Work will be supported

n. The Hospital Administration course at the University of Tehran will be included in the approved curriculum and ultimately incorporated as a division of the Graduate Department of Community Health.

o. New dental schools will be established at Mashad and at Pahlavi University.

p. The program of foreign scholarships will be expanded to provide the following:

For physicians	Public Health Administration Preventive Medicine Hospital Administration Clinical Teaching
Nurses	Public Health Nursing Nursing Education Clinical Nursing
Engineers	Sanitary Engineering

sanitarians	Water Resources
	Sanitation
	Water and Air Pollution Control
others	Malaria Eradication
	Hospital Administration
	Business Administration
	Health Education
	Social Work

q. The following tables show the increasing capacities planned to meet training needs.

Training Capacities

	1340	1341	1342	1343	1344	1345	1346
1. **Medical Schools**	567	567	615	630	645	660	675
Period Totals		1134					3225
2. **Nurses Schools**							
Tehran:							
Ashraf	80	80	80	80	80	80	80
Reza Shah Kabir	46	46	46	46	46	46	46
Tabriz:							
American Mission	15	15	15	15	15	15	15
University	30	30	30	30	30	30	30
Rasht:							
Isfahan:							
Shiraz:							
Namazee	18	18	24	33	33	33	33
Mashad:							
Jorjani	19	19	15	19	19	33	20
Abadan:	20	20	20	20	20	20	20
Kerman:					20	20	20
Period Totals		456					1287
3. **Midwifery Schools**							
Tehran:							
High Institute	30	30	46	49	53	53	56
Period Totals		60					260
4. **Behyari Schools**							
Tehran:							
UNICEF	40	40	40	40	40	40	40
Farah	20	20	20	20	20	20	20
AJDC	7	7	10	10	10	10	10
Tabriz:							
Red Lion & Sun			20	20	20	20	20
Rasht:	20	20	20	20	20	20	20
Isfahan:							
Red Lion & Sun	20	20	20	20	20	20	20
University			9	10	10	10	10
Mission Hospital			8	10	10	10	10
Ahwaz:							
NIOC	12	12	12	12	12	12	12
University							

Training Capacities

	1340	1341	1342	1343	1344	1345	1346
Hamadan:							
Mission Hospital	10	10	10	10	10	10	10
Shiraz:							
Saadi	24	24	24	24	24	24	24
Zahedan:							
Sanandaj:							
Rezaieh:							
Shahrestan Centers			1000	1000	1000	1000	1000
Period Totals		266					6052
5. **Behyari Midwifery Schools**							
Shiraz:							
Red Lion & Sun	12	12					
All Behyari Schools			242	242	242	242	242
Period Totals		24					1210
6. **Dental Schools**							
Tehran	100	100	100	100	100	100	100
Mashad			50	50	50	50	50
Shiraz							
Period Totals		200					750
7. **Pharmacy School**							
Tehran	50	50	30	30	30	30	30
Period Totals		100					150
8. **Sanitarian Schools**							
Palasht	50	50	100	100	100	100	100
Shahrestan Offices			200	200	200	200	200
Shiraz							
Pahlavi							
Period Totals		100					1500

Training Capacities

	1340	1341	1342	1343	1344	1345	1346
9. **Laboratory Schools**							
Tehran	20	20	20	20	20	20	20
Period Totals		40					100
10. **Health Education Training**							
Tehran:							
In-service T'ng	5	10	10	10	10	10	10
Period Totals		15					50
11. **Social Service School**							
Tehran:							
School of Social Work	15	15	20	20	30	30	30
Period Totals		30					130
12. **Hospital Administration School**							
Tehran:	30	30	30	30	30	30	30
Period Totals		60					150
13. **Scholarship Training**							
Public Health Physician	5	5	8	8	10	10	10
Public Health Nurses	20	20	20	20	20	20	20
Sanitary Engineer	5	5	5	5	5	5	5
Health Educator	2	3	1	1	1	1	1
Social Worker	1	2	1	1	1	1	1
Hospital Administrator		2					

Program

For the period of the Third Five-Year Plan the following will be accomplished:

(a) Physicians

Train 3,225 physicians

Provide 46 foreign scholarships

Reduce entering class at Tehran to 300 and expand entering classes in each of the provincial schools to 75.

Begin development of a Graduate Department of Community Health at the University of Tehran

Begin development of graduate and research departments in the various medical specialties.

(b) Nurses

Train 1,287 professional nurses

Train 6,052 behyars

Provide in-service training for nurses aids

Train 260 nurse-midwives and 1,210 behyar-midwives

Provide for 100 foreign scholarships in public health nursing

Expand programs at Nemazee and Jorjani Schools.

Develop new nursing school at Kerman

Develop new behyari schools at the Mission and University Hospitals in Isfahan, the Red Lion and Sun Society Hospital in Tabriz, and at Rasht, Sanandaj, Zahedan, Rezaieh, and Ahwaz.

Expand the behyari school of the American Joint Distribution Committee in Tehran.

Expand programs in midwifery schools

Plan with Ministry of Education an academic degree course for professional nurses.

Establish in each of the 100 Shahrestan Health Centers behyari training units of 10 students and 3 faculty.

(c) Dentists

Train 750 dentists

Establish School of Dentistry at Pahlavi University.

(d) Pharmacists

Maintain present training facilities, graduating 150 pharmacists during this period.

(e) Laboratory Personnel

Train 100 laboratory technicians and aids

Develop training for specialized laboratory techniques.

(f) Environmental Sanitation Personnel

Provide 25 foreign scholarships

Expand program at Palasht

Develop graduate training at University of Tehran

Train 1,000 sanitarian aids in Shahrestan Health Centers and Offices.

(g) Health Educators

Provide 5 foreign scholarships

Provide in-service training for 50 aids.

(h) Social Service Personnel

Provide 5 foreign scholarships.
Provide local training for 130 social work aids.

(i) Hospital Administrators

Provide local training for 150 hospital administrators.
Continue present course leading to its incorporation in the university curriculum.

Except for the nurses' training which will require 16 more faculty nurses for the expanded and new schools of nursing and 300 graduate nurses to act as faculty for the Shahrestan behyari schools, and for the medical school expansion which will require additional instructors, no great increase in personnel is anticipated. The physicians for the additional academic positions should be available. More serious, however, is the question of providing full time salaries for the key professors.

It has been agreed that the behyars trained in the Shahrestan behyari schools will be of poor quality. To meet this shortcoming it has been recommended that once they graduate they should undergo a three months extra training at the regular behyari schools to come up to the standards established.

Extra construction should not be excessive. With one or two exceptions (Ahwaz & Tehran) sufficient facilities exist with proper renovation and recapture for medical use of buildings diverted to other purposes. Completion of new facilities already started will receive first priority before new construction is/ approved.

Interim Measures

The following interim measures are planned:

Train 1,134 physicians.

Plan expansion of provincial medical schools and reduction of entering class of Tehran University School.

Provide 10 foreign scholarships in public health for physicians.

Train 456 professional nurses.

Train 266 behyars

Provide in-service training for nurses' aids.

Train 60 nurse-midwives.

Train 24 behyar midwives.

Provide 40 foreign scholarships for public health nursing.

Plan projected nursing program.

Complete curriculum studies in nursing

Train 200 dentists.

Plan new school at Mashad.

Train 150 pharmacists.

Train 100 laboratory technicians and aids.

Develop training facilities in laboratory specialties.

Provide 10 foreign scholarships for sanitary engineers and sanitarians.

Plan expansion of Palasht School.

Explore possibility of graduate training at Tehran University.

Plan on-the-job training program for sanitarian aids in the Shahrestan Health Centers and Offices.

Provide 5 foreign scholarships for health educators.

Provide in-service training for 15 health educator aids.

Provide 3 foreign scholarships for social workers.

Provide local training for 30 social work aids.

Provide 2 foreign scholarships for physicians in hospital administration.

Provide local training for 60 hospital administrators

Begin negotiations for incorporating present hospital administration course into University curriculum.

For this period no added personnel, facilities, or funding will be necessary.

11. Provision of Training Facilities for Health Personnel

a. Physicians

(d) Allocations

(1) Maintenance
75,000,000 x 5 x 1.6 = 600,000,000
400,000,000 x x 1.6 = 640,000,000
1,240,000,000

1,240,000,000) See Education Plan Frame

(2) Development ----)

1341-46

(1) Maintenance
1,240,000,000 x 2/3 x 0.9 x 6.62 4,927,266,000

(2) Development
1,240,000,000 x 2/3 x 1/6 = 138,000,000

5,065,266,000

b. Nurses

1340-41

(1) Maintenance

Ashraf	5,100,000
Reza Shah	4,600,000
Tabriz Nis	1,500,000
Univ.	3,200,000
Nemazee	3,500,000
Jorjani*	3,560,000
Abadan	3,000,000

1.6 x 24,460,000 = 39,136,000

(2) Development
Kerman* - equip. 6,000,000 6,000,000

45,136,000

1341-46

(1) Maintenance
39,136,000 x 2/3 x 0.9 x 6.62 155,448,194

(2) Development

*Kerman (begin 1342)
(Opn 3,000,000)
4.53 x (Pers 590,000) = 16,262,700

Isfahan(begin 1345)
2.15 x (Opn 3,000,000)
(Pers 590,000) = 7,718,500

Increase in existing schools:

1 yr x 7% x 2/3 x 39,136,000 = 1,826,347

25,807,547
181,255,741

*Nursing Health Schools

c. Nurse-midwives

1340-41

(1) Maintenance
High Institute
1.6 x 3,000,000 = 4,800,000

(2) Development ---

4,800,000

1341-46

(1) Maintenance
4,800,000 x 2/3 x 0.9 x 6.62 = 19,065,600

(2) Development
High Institute expansion =
4 yr x 0.87 x 3,000,000 = 1,044,000

20,109,600

d. Behyars

1340-41

(1) Maintenance

UNICEF	3,800,000
Farah	3,000,000
ADJC	1,000,000
Rasht	3,000,000
RL/S-Isfahan	3,000,000
NIOC	2,000,000
Hamadan Mis	2,000,000
Saadi	3,000,000
1.6 x	20,800,000 = 33,280,000

(2) Development ---

33,280,000

1341-46

(1) Maintenance

33,280,000 x 2/3 x 0.9 x 6.62 = 132,188,162

(2) Development

Tabriz (begin 1343)
(Opns 3,000,000
3.31 x (Pers 590,000 = 11,882,900

Isfahan
Mission (begin 1342)
(Opns 3,000,000
4.53 x (Pers 590,000 = 16,262,700

University
same = 16,262,700

Shahrestan Centers
(begin 1342)
(Opns 1,000,000
100x4.53(Pers 324,000 = 599,772,000

Facil. Dev. 155,820,000 800,000,000

932,188,300

e. Behyar Midwives

1340-41

(1) Maintenance
R/LS. Shirazi
1.6 x 500,000 = 800,000

(2) Development --

800,000

1341-46

(1) Maintenance
800,000 x 2/3 x 0.9 x 6.62 = 31,776,098

(2) Development
Included in Behyar School figures --

31,776,098

f. Dentists

1340-41

(1) Maintenance
Tehran = 1.6 x 50,000,000 = 80,000,000

(2) Development --

80,000,000

1341-46

(1) Maintenance
80,000,000 x 2/3 x 0.9 x 6.62 =

(2) Development
Mashad
4.53 x Opns = 35,000,000 = (See Education Plan Frame)

g. Pharmacists

1340-41

a. Maintenance
20,000,000 x 1.6 =

b. Development (See Education Plan Frame)

1341-46

a. Maintenance
32,000,000 x 2/3 x 2/3 x 0.9 x 6.62 84,736,005

b. Development ---

84,736,005

h. Laboratory Technicians

a. Maintenance
10,000,000 x 1.6 = 16,000,000

b. Development ----

16,000,000

1341-46

a. Maintenance
16,000,000 x 2/3 x 0.9 x 6.62 = 63,555,200

b. Development ---

63,555,200

i. Sanitarians

1340-41

a. Maintenance

Palasht = 3,000,000 x 1.6 = 4,800,000
In-service = 2,000,000 x 1.6 =3,200,000
8,000,000

b. Development
In-service training
Pers: 2 Sect Ch 30
2 Instr 30
1 Secy 8
68 x 12 = 816,000

Facil 750,000
Opns 30% of Pers = 244,800
1,810,000
9,810,800

1341-46

a. Maintenance
9,060,800 x 2/3 x 0.9 x 6.62 = 35,989,406

b. Development
Shahrestan Office Schools
(Opns = 76,000)
4.53(Pers =180,000) x 100 = 115,968,000

Palasht Expansion
4.53 x 2,000,000 = 9,060,000

In-service
Pers = Asst Dir 15
2 Instr 30
6.62 x 45 x 12 = 3,574,800
Opns = 30% of Pers 972,440
129,575,240
165,564,736

j. Health Educators

1340-41

a. Maintenance
200,000 x 1.6 = 3,200,000

b. Development ---

3,200,000

1341-46

a. Maintenance 3,200,000 x 2/3 x 0.9 x 6.62 =	12,710,400
b. Development	---
Amount transferred to Dev. Fund*	12,710,400

k. Social Workers

1340-41

Support by Tehran School Social Work	(See Education Plan Frame)

1. Hospital Administrators

1340-41

a. Maintenance 1,000,000 x 1.6 =	1,600,000
b. Development	---
	1,600,000

1341-46

a. Maintenance 1,600,000 x 2/3 x 0.9 x 6.62 =	6,355,202
b. Development	
Amoutn transferred to Dev. Fund*	6,355,202

N.B. The costings for the training of physicians, dentists, pharmacists and social workers have been taken into account in the Education Plan Frame.

* These funds were previously financed by Plan Organization and will therefore have to be accounted for in the Third Plan.

Development Funds for Training

	(In 1000 Rls.)
Nurses	25,858
Nurse Midwives	1,044
Behyars	800,000
Sanitarians	129,575
Health Educators	12,710
Hospital Administrators	6,355
Scholarships and others	24,000
Total	999,492

XII. PROVISION OF RESEARCH FACILITIES

a. Background Information

A continuing research program is an essential feature of any comprehensive health service plan. No country can allow its own specific practice to rest forever on the investigations of others, nor can it avoid this without offering an intellectual stimulus to local researchers.

Iran can be justly proud of many outstanding scientists and institutions already devoted to the search for new knowledge. The Razi Institute, the Pasteur Institute, the Malaria Institute, the Nemazee Hospital, the Cancer Institute are all in this group. Their work is clearly of the highest merit. Research efforts in organizational and behavioral science is less apparent.

There is no apparent block in the development of research facilities. Budget is a problem at present, but will cease to be so when the necessity of research is recognized as an essential element of an on-going program.

b. Policy and Strategy

The goal of this activity is to provide special facilities for research in medical sciences where needed, and to stimulate the attitude of enquiry in all health workers. In general this will be accomplished through a combination of careful planning, co-ordination of present resources, and the development of new construction programs. The essential elements are the co-ordinating facilities of the Royal Council for Health, the construction of new facilities only when indicated, and the use of a variety of means to stimulate the interest in the inquiring approach.

c. Objectives and Targets

The goal will be reached through the following specific targets:

a. The coordination of present research efforts to avoid unnecessary duplication, always, however, with the knowledge that some competition is good and that research results require validation by repetition.

b. Organization of a division in the Ministry of Health to furnish administrative support to certain health institutes such as the Pasteur Institute and the Malaria Institute.

c. Organization of a National Research Council as an affiliate to the Royal Council for the study of research problems, the assignment of grants, the follow-up of these studies, and the administration of a National Medical Library.

d. Development of specialized research installations where indicated.

e. Stimulation of the attitude of research in the medical schools.

f. Stimulation of the continuing spirit of inquiry by the provision of postgraduate opportunity for investigation, the assignment of specific problems for investigation within the Ministry, the development of professional periodicals, and the like.

g. Organization of a national library of medical sciences, to be called, perhaps, the National Medical Library of Iran.

12. Provision of Research Facilities

Institute of Malariology

1340-41

a. Maintenance *39,500,000 x 1/2 x 0.9 x1.6 28,440,000
b. Development
  (1) For Office of Research
    Persons = Asst. Dir 20
      Secretary 8
      28 x 12 = 336,000
    Facility = Office Equip. 10,000
    Operations = 25% of persons=
  (2) Totals
    Persons = 1.6 x 336,000 = 537,600
    Facility 10,000
    Operations = 1.6 x 8,400 13,440
      561,040
      29,001,040

1341-46

Development
  (1) For Office of Research
    Persons = Director 30
      2 Ch 30
      Secretary 8
      68 x 12= 816,000
    Facility = Off. Equip 25,000
    Operations = 30% of persons 244,800
  (2) For Staff of Medical Journal
    Persons = Director 30
      3 Ch 45
      Secretary 8
      83 x 12= 996,000
    Facility= Off. Equip = 30,000
      Publishing = 760,000
    Operations = 40% of Pers. = 398,400
  (3) Staff of Research
    Hosp. (See under Health Facilities)

* One half Malaria Institute budget; other half is included in 7.a. Malaria Education.

(4) For Research Fellowships

Facility = 10 x 380,000 3,800,000

(5) Totals

Personnel = 816,000
996,000

6.62 x 1,812,000 = 11,995,440

Facility = 25,000
30,000
3,800,000
3,855,000 = 3,855,000

6.62 x 760,000 = 5,031,200

20,881,640

(6) Dev. of Malaria Institute including funds carried over from 2nd Plan 95,230,000

(7) Pasteur Institute

1341-46

Development

Gen. equip.	36,100,000	
Lab. "	10,900,000	
Hosp. "	3,000,000	50,000,000
		166,111,640

DEVELOPMENT FUNDS FOR HEALTH

HEALTH		Million Rls.	Percentage
EVALUATION, PLANNING AND COORDINATION		18	0.1
ENVIRONMENTAL SANITATION		284	2.3
HEALTH FACILITIES			
Health Centers	4,463		
Health Station	730		
Children's Medical Center	124		
Tuberculosis	353		
Leprosarium Facilities	42		
Others	114		
		5,826	47.2
COMMUNICABLE DISEASES			
Malaria Eradication	3,383		
Smallpox	443		
Trachoma	24		
Tuberculosis	148		
Leprosy	86		
Venereal Disease	144		
Quarantine	125		
Others (Bilharzia)	172		
		4,525	36.6
SERVICES FOR SPECIAL HEALTH NEEDS			
Maternal and Child Health	25		
Chronic Diseases	5		
School Health	100		
Mental Health	142		
Dental Health	4		
Drug Addiction	40		
Industrial Health	6		
Laboratory Services	50		
		372	3.0
SUPPORT SERVICES			
Nursing	118		
Social Service	6		
Nutrition	25		
		161	1.3

HEALTH		Million Rls.	Percentage
TRAINING FACILITIES			
Nurses	25		
Nurse Midwives	1		
Behyars	800		
Sanitarians	130		
Health Educators	13		
Hospital Administrators	6		
Scholarships	24		
		999	8.2
RESEARCH			
Office of Research	21		
Institute of Malariology	95		
Pasteur Institute	50		
		166	1.3
TOTAL		12,380	100.0

FUNDS ALLOCATED TO HEALTH DURING SECOND PLAN PERIOD

(in million rials)

Programs	Funds paid from 1334 to end 1338	1339	1340	1st half of 1341	Total from 1339 to mid-41	Grand Total
Malaria	925.4	307.4	433.7	221.3	962.4	1,887.8
Communicable Diseases	292.2	84.8	142.7	52.0	279.5	571.7
Training	67.0	17.0	20.9	7.9	45.8	112.8
Facilities	429.3	67.2	128.1	121.5	316.8	746.0
Statistics*						
Grand Total	1,713.8	476.4	725.4	492.7	1,604.5	3,318.3

* Funds allocated to Statistics have been transferred to the Statistical Plan Frame.

IDC

INDUSTRY & MINING
THIRD PLAN FRAME

1341-1346

(September 1962-March 1968)

Prepared: **Industry & Mining Section**
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Division of Economic Affairs
Plan Organization
Tehran
May 1961

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15 JAN 1962

PREFACE

On Khordad 30, 1338 (June 21, 1959) the Parliament directed that a Third Development Plan be prepared for the country. On Dey 20, 1338 (January 11, 1959) the responsibility for the preparation of the Plan was delegated by the Government to the Plan Organization. The Division of Economic Affairs of the Plan Organization was given the authority to prepare the Third Plan with the cooperation of the Technical Bureau and other divisions of the Plan Organization and the Ministries. Accordingly a circular was issued by the Prime Minister to all government agencies to cooperate with the Plan Organization in the preparation of the Plan.

Subsequently two main committees were established. One was the Industrial Planning Committee composed of the representatives of Plan Organization's Division of Economic Affairs, Technical Bureau, Industry Operating Division, Project Bureau and Budget Bureau. The other was the Ministrial Committee established at the Ministry of Industries and Mines. These two committees sat in joint sessions chaired by the writer to discuss the framework of the industrial Plan. The following sub-committees were also set up to work on various programs submitting their reports to the joint Plan Organization-Ministrial Committee.

1. Plan Organization's Technical sub-committee, for technical feasibility studies, headed by Eng. R. Asbagi and composed of representatives of Plan Organization's Industry Operating Division and Technical Bureau, the latter represented by Mr. L.H. Berge and Mr. W. Ewing.
2. Ministry of Industries and Mines
   Chief representatives: Eng. K. Iravani and Eng. R. Razmara, Undersecretaries, Eng. P. Bayat, Head Statistics Department.
3. Ministry of Commerce
   Chief representative:
   Dr. Barzegar, Undersecretary
4. Customs and Monopolies
   a) Tea Monopoly Organization
      Chief representative:
      Mr. A. Khoshbakht, Deputy Director
   b) Tobacco Monopoly
      Chief representative:
      Mr. E. Saremi, Director
5. Fisheries Organization
   Dr. A. Chubin, Managing Director, Northern Fisheries Co.
   Dr. M. Rassa, Managing Director Persian Gulf Fisheries Co.
6. National Iranian Oil Co.
   Chief representative:

Eng. F. Nafici, Director of Exploration and Explortation.

7. Industrial and Mining Development Bank

Representatives:

Dr. W.A. Van Ravesteijn, Managing Director

Mr. M. Samii, Associate Managing Director

Dr. H. Alai, Manager, Economic Department

Dr. F. Mahdavi, Economist

Eng. F. Matin, Investment Officer

8. Industrial Credit Bank

Chief representatives:

Dr. A. Farmanfarmaian, Governor

Mr. M. Ebrahimi, Head, Economic Department

9. Central Bank

Chief representative:

Dr. R. Moghadam, Deputy Governor

The present Plan Frame is the result of the joint effort of these committees and consultations with many other government agencies, private banks, public and private industries and other enterprises. The Plan is the result of selecting, analyzing and refining their projects and proposals and integrating them in their order of priorities in such a manner that they may make the maximum contribution to the economic and industrial development of the country.

On behalf of the Industry and Mining Section of the Division of Economic Affairs I wish to thank all members of the committees and other government and bank officials who actively cooperated in the preparation of this Plan Frame.

Mostafa Elm
Chief, Industry and Mining Section
Division of Economic Affairs.

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Section I

Introduction

During the First and Second Seven Year Development Plans Iran has taken major steps toward industrialization. This has been achieved through the joint efforts of the government and private sectors.

Serious efforts for Iran's industrialization, however, started nearly 34 years ago by the late Reza Shah as part of his program for modernizing the country. During the period of his reign from 1925 to 1941, some 100 industrial and mining establishments were set up. These included 8 beet sugar factories, 2 cotton textile mills, 1 jute mill, 1 cement mill, 2 food canning and 9 mining establishments.

With the advent of World War II, however, development activities came to a complete halt. But after the war the idea of developing the economy through government invitiative gained much ground and this resulted in the establishment of the First Seven Year Development Plan in 1949.

The level of government investment in industry and mining during the First and Second Plan was not of any major size. During the First Plan which ended in 1954 (1333) a sum of Rls.1180 million were spent for industries. This was mainly for the completion of two sugar refineries, continuing the construction of the Tehran Tchitsazi textile mill, a contract for the purchase of machinery for 2 new textile mills, and government participation in the Fars Cement Co.

During the Second Plan, after reductions in industrial allocations, a sum of Rls. 6765 million or about 8% of the total plan investment was allocated to industries.

This sum was mainly spent for the establishment of 2 cement mills, the completion of 2 sugar factories and two textile mills among a number of other smaller factories. (see table 1 for industries established or completed during the Second Plan).

Industrial development efforts, however, were not confined to the government. The private sector has played a major role in industries since 1930, and particularly during the last 4 years when the government sponsored a program of liberal credit for private investers.

Since May 1957, when Iran's currency cover of gold and foreign exchange was revalued and Rls.7.1 billion ($94 mn.) released, the private sector has contracted, out of this revaluation fund, loans totalling Rls.5211.6 million for industrial investment. The loans given to the private sector have been used in the following industries (a good index of the overall trend of investment in the private sector):

	%
Textile	32
Sugar	25
Chemicals & Pharmaceuticals	12.6
Food processing	9
Construction material	7
Plastics and rubber	3.2
Mining	2.6
Leather	1.5
Paper and wood industries	1.3
Other	5.8
	100.0

In addition to such credit facilities the government gave further stimulus to private industrial investment by extending certain tax and tariff exemptions.

These measures brought in a boom of private investment within the last 4 years. Before the granting of such loans and tax and tariff exemptions private investment in industry was quite low. Between 1949 and 1958 private industrial investment did not exceed $50 million a year; during the last four years the figure has jumped to about $110 million annually.

Some mention should be made of investment in the oil industry. The Oil Consortium has made during the four years since its establishment in 1954, an average annual investment of $30 million, while the National Iranian Oil Co. has invested about $20 million a year during the same period.

The result of a high rate of investment in industries has been a substantial rise in production.

First there was the rise in oil production and oil income. The production of oil which reached a peak of 32 million tons in 1950 before nationalization fell to 100,000 tons in 1953 owing to oil dispute . After agreement with the Oil Consortium in 1954 production recovered rapidly and reached an historical peak of 44.7 million tons in 1959, yielding $258 million.in government oil revenues from foreign sales.

There has also been a rise in the output of many other industrial products as a result of public and private investment. This is particularly apparent in the case of textiles, sugar and cement.

In the field of cotton textiles there has been a tremendous expansion. In 1949, before the start of the First, Plan, there were 12 private and 4 government mills with total annual capacity of 60 million meters. Today, there are 60 private and 4 government mills with an annual production of 160 million meters. Present plans for expansion would increase production to 350 million meters by 1963. Per capita annual consumption of cotton piece-goods which was 10 meters in 1949 has now reached 16 meters.

The sugar industry, too, has had its share of expansion. In 1930's during the period of Reza Shah eight government sugar mills were built with a total annual production of 55,000 tons. The Plan Organization has, during the last of 10 years, built 4 more sugar mills one refinery bringing the total annual production to 110,000 tons. Moreover it is establishing a cane mill and refinery in Haft Tapeh, which will go into operation in 1962 with an initial annual production of 30,000 tons of cane sugar.

The production of sugar which was a government monopoly until 1338, has recently been thrown open to the private sector. As a result private concerns have ordered machinary for 8 new sugar mills and 3 refineries some of which are already in operation or under construction. All the new plants will be in operation by the end of 1962 bringing total annual production to 200,000 tons.

The only cement factory which existed 10 years ago was the Rey Plant near Tehran with an annual production of 90,000 tons. Today there are 3 government and 5 private mills with an annual capacity of 810,000 tons. The present expansion plans will raise annual production to 1.1 million tons by 1962. The construction of dams and the expansion of housing has stimulated the expansion of this industry.

There has also been a continuous rise in the production of other goods. Table 1 shows the increase in production of some important items between 1334 and 1338.

TABLE 1 - ANNUAL PRODUCTION OF MAIN INDUSTRIAL AND MINING PRODUCTS IN 1334 AND 1338

	1334 production (in thousands)	1338 production (in thousands)
Oil	16,000 tons	44,700 tons
Cement	131 "	700 "
Sugar	75 "	110 "
Vegetable oil	none	20 "
Tea	7 "	8 "
Glass	4 "	5 "
Soaps	15 "	35 "
Chromite	10 "	46 "
Iron ore	14 "	30 "
Cotton textiles	34,000 meters	160,000 meters
Hand-woven textiles	40,000 "	40,000 "
Woollen textiles	2,000 "	2,100 "
Matches	300,000 boxes	400,000 boxes
Cigarettes	6 billion	7 billion

Industrial production which formed a negligible part of national product some 30 years ago, forms today about 13% of national income while the oil industry alone contributes another 12%.

Thus Iran has developed fairly large textile, sugar and cement industries. Furthermore it has entered into a good number of other industries such as food processing, metal fabrication, glass, paints and some simple chemicals and pharmaceuticals.

Iran has set out on the road to industrialization. The Third Plan will try to guide this development along a path that will take maximum advantage of the country's present and future resources.

Table 2

Major Industrial Projects of the Second Plan

extile	
ahi 1	Rehabilitation of old Shahi textile mill with 22,000 cotton spindles and 450 looms. Annual capacity 12,000,000 meters.
hshahr	Rehabilitation of Behshahr textile factory with 32,000 cotton spindles and 1200 looms. Annual capacity 30,000,000 meters.
ahi No. 2	Establishment of Shahi No. 2 mill with 30,000 cotton spindles and 1020 weaving looms with annual capacity of 30,000,000 meters.
ahi No. 3	Establishment of dyeing and finishing plant with an annual capacity of 60 million meters. Also a 10,000 KW electric power station in Shahi to supply electricity to all mills in that area.
itsazi Tehran	Completion of Chitsazi with 40,000 cotton spindles, 1,288 weaving looms together with dyeing and printing machines. Annual capacity of 40 million meters.
nd looms	4 weaving factories at Isfahan, Yazd, Kerman, and Koohpayeh with 320 hand looms together with dyeing and steam machines.
te factory No. 2 in Shahi	Establishment of a new jute mill in Shahi with 120 automatic weaving looms together with spinning mill. Annual production capacity of 7,000,000 meters.
gar	
enaran factory in Khorasan	Construction of Chenaran sugar factory with an annual capacity of 5,000 tons of sugar.
rdsir factory in Kerman	Construction of Bardsir sugar factory with an annual capacity of 5,000 tons.
ment	
rud cement plant	Construction of Dorud cement plant with an annual capacity of 80,000 tons.

Manjil cement plant	Construction of Manjil cement plant with an annual capacity of 90,000 tons.
Vegetable oils	
Varamin	Completion of Varamin Oil Extraction plant with a capacity of 10 tons per day of hydrogenated oil.
Roodbar	Establishment of Roodbar olive oil plant. Capacity 72 tons of olives per day. (yiel ing 18-20% olive oil)
Fisheries	
Bandar Abbas	Completion of Bandar Abbas canning factory with capacity of 4,000,000 cans of sardine and tuna per year if fish is available.
Gulf fisheries Co.	Establishment of gulf fisheries Co. with target of 2000 tons of fish per year.
Completion of Vocational Training School at Karaj	
Mines	Exploration of Shamsabad iron ore and Alborz and Kerman coal.

Section II

Objectives of the Plan

The main objective of the Industry Plan is to develop and expand those industries which will provide the maximum increase in national income. The secondary objectives of the Plan are to increase employment opportunities, create foreign exchange savings, and bring about a more even distribution of income.

In practical terms those industries will be developed in which Iran has an advantage in terms of raw materials, skills and market potentialities at home and abroad. Thus more opportunities will be created for the use of domestic raw materials by providing markets for them in industry.

The main approach to creating employment opportunities will be to assure a high level of investment, especially in small and medium-sized industries. There is no intention of encouraging the growth of labor - intensive methods and equipment at the expense of high production costs.

When choices must be made among projects showing substantially the same increase in national income, priority will be given to:

1. Industries which increase the degree of self-sufficiency in essential consumer goods, so as to protect the country from disruptions in international supplies.

2. Export industries which have potential foreign markets such as oil, mineral ores, dried fruits, dates, carpets etc.

3. Industries which have the most favorable effects on Iran's balance of payments.

In order to expedite the industrial development of Iran and contribute to the objectives of the Plan, the following policies will be encouraged:

1. The healthy growth of private industry will/~~be~~ be assisted by every possible means; public investment will be confined to those enterprises which private investors would not enter but which are considered beneficial for the country's economic development. These may include large mining projects, some petrochemical projects, newsprint and some other enterprises which may require heavy investments, involve undue risks and/or yield low profits.
2. Foreign investment will be encouraged, as well as the inflow of foreign technical assistance so as to increase the technical and managerial efficiency of Iranian industry.
3. Industrial efficiency will also be promoted through training and education of skilled workers and management at all levels. The improvement of managerial skills is considered a top priority task at this stage of industrial development.
4. The spread of industries outside main cities (especially Tehran) will be further encouraged and a new awareness will be created toward the importance of small-scale industries so as to bring about a more even distribution of income.

Section III

THE STRATEGY OF INDUSTRIAL DEVELOPMENT

No one can predict with confidence the specific direction of a country's industrial growth. However, it is part of government's responsibility to guide industrial growth along lines that seem appropriate to the country's needs and production possibilities. What are the special needs and possibilities of Iran?

According to theory, each country should specialize on those lines of production which it can do better than other lines. If a country specializes along the lines of "comparative advantage" it will have surpluses of some of the things it produces, and shortages of the things it needs but does not produce. These surpluses would be exported in exchange for those things which the country cannot make so well. In this way a country makes the most of its resources and talents -- by concentrating on the things it can produce at low cost and by avoiding things it can produce only at high cost. The imbalance between its production and consumption is made up by international trade. The same argument applies not only among different countries but among different sections of the same country and even among individuals. By specialization and trade people and countries maxmize their standard of living.

On what lines of production should Iran specialized?

What types of production should the country avoid, at least for the present? What are the practical tests for applying the theory of comparative advantage outlined above? Unfortunately there is no formula that will provide automatic answers. The answers are partly a matter for judgment: reasonable men may hold different opinions about the wisdom of any particular project. Nevertheless, investment decisions cannot be based solely on judgment and opinion: as much as possible, they must be based on fact and an understanding of sound theory. The main facts needed are economic and technical. This is why decision-makers, whether they are politicians or private businessmen, should test their proposals against the specialized judgments of economists and engineers.

As a practical matter, there are two critical tests for deciding whether or not a particular industry should be encouraged or discouraged: (1) is the product something Iran can make to reasonable standards of quality and cost and (2) is there an adequate market for it? Both questions must be answered affirmatively to justify investment in the industry. Any industrial or mining proposal which cannot meet these two tests should be actively discouraged.

How does one judge whether the cost of manufacture in a particular industry is "reasonable" or not? There is a big difference between industries that are already established and new industries. For established industries, the main test is to compare domestic production costs with the cost of imported products, for example, if Iran can make ordinary textile products at a cost 25 per cent above imported goods of the same quality, and fancy textile products at a cost 100 per cent above imported goods, then Iran should specialize on the ordinary grades and import the fancy grades -- as in fact we now do. The different percentages by which Iran's costs exceed the cost of imported goods reflect the fact that Iran's resources are better suited to the production of ordinary grades than to fine qualities -- in this case because Iran does not grow much long-staple cotton, does not yet have a highly trained textile labor force, and does not have the necessary capital equipment.

The situation is more difficult when one is trying to decide about an entirely new industry, never before tried in the country. This is a very common case in Iran today. In practice, new production units should be based on resources available within the country. Indeed a major part of industrial planning is to think of industries that can use resources that are known to exist in the country. The best example of this is the search for ways to use the natural gas that is now burned off as a wasted by-product of oil production. Sometimes the attempt to use a resource come to nothing because the market for the product is too small to support the investment. At present this is the main problem in finding petrochemical possibilities suitable for Iran.

Two General Tests: Resources and Markets

The general shape of industrial growth can be partly defined by knowledge of a country's resources and the structure of its markets. Underdeveloped countries do not have good knowledge of their natural resources and new resources are constantly being uncovered. These discoveries open up new production possibilities.* Markets, too, are constantly changing as more and more people are able to buy a wider and wider range of goods. This dynamic quality of both resources and markets leads to an important conclusion: the suitability of a particular industry is often a matter of timing. An industry which may be unsuitable today may justify itself a few years in the future.

It is important that the term "resources" be properly undeŏstood. There are three main types: natural resources, financial resources (capital), and human and institutional resources. Unless a country has an abundance of all three types, there will be many products which it will not be able to make satisfactorily. It is true that capital, raw materials and skills can be imported. But why should a country emphasize those industries that are dependent upon imported resources if there are other possibilities that do not?

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*The "discovery of new resources" must be thought of both in general and very specific terms. It is one thing to discover iron ore but it is equally important to discover its exact chemical composition. This can be done only through scientific laboratory analysis.

Iran today is relatively well endowed with natural resources and financial capital rather than skills and institutions. Since the country is still in the early stages of industrialization, it is relatively poor in the labor, managerial and technical skills needed by modern industry and mining. Also lacking is a well-developed network of specialized social institutions to supply modern industry with needed services. The country has an abundance of labor skilled in many traditional industrial crafts. Where the market outlook for such goods is favorable maximum use should be made of this resource. In general, industrial investment should concentrate on projects that make good use of Iran's natural resources and avoid those that rely heavily on imported raw materials, on highly developed labor and managerial skills, ~~or~~ on the creation of large and complex organizations.

In summary, industrial investment proposals must be judged by three main criteria: (1) the availability of resources, natural, financial, and human, (2) the size of the market, both domestic and foreign, and (3) the technical characteristics of the industry, since these govern the economic size of a production unit. In arriving at a judgment in any particular case, the question of historical timing is of great importance. Any country which tries to leap ahead too fast will quickly find itself in serious trouble -- shortages of raw materials, poor-quality products of high cost which cannot be sold, low production with much capital locked up in under-utilized factories, shortages of foreign exchange, frequent break-downs and accidents and shortages of spare parts and, as an overall result, a rapid increase in the cost of living. Iran is suffering from many of these difficulties today.

The Present Stage of Industrialization in the Country

Iran is a country dominated psychologically, politically, and economically by a capital city of fairly high income and Western tastes. This central "island" is surrounded by an agricultural society that has significantly lower incomes and much more traditional tastes. Under the strong influence of heavy government spending on development projects and liberal credit policies production has been buoyant in most fields, private industrial investment has risen rapidly, urban unemployment has been manageable despite substantial migration (especially into Tehran), and consumer purchasing power has been fairly strong. Tehran has experienced an extended building "boom". Demand has been good for construction materials and manufactured components needed for civil works, housing, and commercial and industrial structures.

The import bill has been swollen by a strong demand for imported consumer goods and capital goods.

A series of good harvests and sustained urban demand have tended to distribute modest cash purchasing power into many villages; this has widened the market for the products of Iranian factories.

Iranian industry stands at the historical starting-point of industrialization in many countries. A significant start has been made by concentrating on a fairly narrow range of essential consumer-goods whose raw materials can be found in the country and whose manufacture does not require either very large sums of capital or highly developed labor and managerial skills. Iran's first factory-scale industries have been textile spinning and weaving, cotton ginning, sugar crushing and refining, brewing, soft drinks, glass bottle making, grain milling, tea processing, soap, leather tanning, fabricated plastic articles, and vegetable oil. At this same early stage a number of simple capital-goods industries are also found, mainly those associated with construction and whose raw materials are usually found in the country: brick-making, cement, structural and decorative iron-work, tiles, window and door frames, sanitary ware, glass, space heaters, and water heaters.

In addition to the above relatively simple industries dependent upon a domestic market, Iran has also developed certain natural resources oriented toward export markets. The oil industry is the most obvious and important example. This industry requires not only export markets but huge sums of capital and a high level of human skills for its successful exploitation and management. Other minerals are also being exploited for export markets (e.g., lead, zinc, chromite, iron and copper).

Iran's factory-scale industry has begun according to a classic pattern; a few essential consumer goods, some simple capital-goods associated with construction needs, and the bulk export of a few natural resources.

The Three Routes of Industrial Expansion

Once industrialization has begun the process moves forward along three routes: (1) the multiplication of existing production units (2) the extension of existing industries "forward" into more highly finished stages and "backwards" into the supply of raw materials and manufactured components, and (3) the introduction of new products that are not closely related, technically, to existing industries.

A few examples may make these distinctions clear. The first process of "horisontal expansion" is readily appa.ent in the recent rapid growth of new units in the textile and sugar industries, the multiplication of brick factories, ice factories, and flour mills. The second process, "vertical extension", is represented by spinning mills that add weaving, weaving mills that add finishing, by cotton ginning firms that enter vegetable oil manufacture and then add a unit to make animal feed out of the cotton seed husks, or a sugar mill that adds a unit tc extract sugar from molasses or starts to make candy. The third form of industrial expansion, "independent investment", is represented by the establishment of plants new to Iran, e.g., the possible establishment of a steel mill, a paper mill, a bicycle plant, a plastic plant, a carbon black plant, and other major investment which introduce an entirely new product never before made in the country. Such major innovations become the basis for subsequent satellite investments based mainly on supplying their needs, or converting their output into other forms. These major autonomous investments are the more dramatic and visible in the public eye; but during any plan period their contribution to output and employment is somewhat less than projects arising from the processes of vertical and horizontal expansions.

Once a few industries have taken root, and the higher income groups have acquired some of the consumer durable goods that go with the modern tastes of urban classes, then many opportunities exist for the development of small repair, service and packaging industries -- truck transportation, automotive repair, electric motor repair, foundry work, metal plating, simple machining operations for refinishing or replacing metal parts, the manufacture of bags, boxes, and cans. These smaller operations are less obvious and visible than large-scale factories; but they are at least as important in terms of skill-formation, capital-formation, providing employment, and developing management skills. It is from this group (and probably more so from commerce) that most of the initiative comes for investment in factory-scale industry.

There are two important classes of industries that appear unsuitable for Iran at the present time -- consumer durable goods (such as automobiles, radios, washing machines, refrigerators, television, typewriters, cameras, optical goods) and machinery and producers goods (such as internal combustion motors, tractors, bull-dozers, precision machine tools, railway rolling stock, airplanes, ships, trucks, printing or textile machinery, heavy-duty electrical generating equipment, electronic items, medical and dental equipment, office machines). Both these classes of products require larger markets, larger sums of capital, more technical and managerial experience, more skilled labor and more specialized raw materials and components than are present in the country. There will inevitably be exceptions to the generalization just made -- for example, Iran is already making good heating stoves and hot water heaters; we think there may well be room for a bicycle assembly plant; it may be possible to justify the manufacture of small electrical motors, fans, and pumps, and household refrigerators. But in general consumer durable goods and producers goods will not be attractive investments for many years to come. Generally speaking, the only way such industries can be made profitable will be giving producers heavy protection; this will mean higher prices and lower quality for consumers.

The Interdependence of Industry and Agriculture

We have emphasized the importance of raw materials and markets as the twin pillars on which industrialization rests. In the early stages of industrialization the agricultural sector of a nation plays a crucial role both in supplying raw materials and providing markets. Later on, as a country develops and becomes increasingly urbanized and industrialized, the dependence of industry on agriculture grows less.

In Iran today ~~80%~~ [illegible]-thirds of the population lives on the land ~~and works~~ in agriculture; over 40 per cent of the nation's income consists of agricultural production. The rural population is thus the largest part of the market for some industrial consumers goods. Because rural incomes are lower than urban incomes and rural tastes simpler and more bound by tradition, the production of many consumers goods must be oriented towards these rural needs and not towards the much narrower markets of the higher-income urban groups. The range of factory-made consumers-goods needed by the rural population is still extremely limited; cloth, footwear, tea, cigarettes, sugar, matches -- these are the principal needs usually supplied from beyond the village economy.

The agricultural Sector is not only a market for consumers-goods; it is also an important market for certain producers goods. As soon as agricultural production begins to be influenced by new methods and new products then a whole new set of opportunities are opened up for industrial production. The introduction of deep-well irrigation opens up a market for pumps and motors. Livestock improvement requires prepared feeds. Dairying requires more metal glass containers. The use of fertilizer requires the production of fertilizer and bags to carry it and spreaders to spread it. Row cropping permits the use of seed drills. The application of pesticides and insecticides requires sprayers. The introduction of poutlry farming requires better feeds, feeding troughs, water troughs, incubators, and other appliances. The use of cleaner seed requires the use of seed-cleaning equipment. Modern cultivating practices open opportunities for mechanical cultivators. These are some examples of how a dynamic agriculture opens up markets for industry.

This relationship also works in reverse; many agricultural possibilities depend upon complementary industrial or semi-industrial projects. For example, it is impossible to [illegible] to sell cotton in export markets without first cleaning it by putting it through a cotton gin. It is proving increasingly difficult to sell Iran's large crop of dried fruit without much better drying, grading and packing in fruit-packing plants. Therapid growth of the vegetable oil industry is being checked for lack of sufficient oil-seeds: an industrial market is waiting for the landlord or peasant who can increase oil-seed production. A modern sugar-cane plantation could not have been introduced without first planning a crushing mill. A plant to make starch for use in the textile industry will open up new markets for maize and wheat. The expansion of tea, tobacco, sugar beet and timbering all depend heavily on having factories ready to process their output.

These illustrations of the interdependence of industry and agriculture make clear why there must be close cooperation between industrial and agricultural planners. If the two sectors are not close, they will both miss profitable investment opportunities.

* * *

Eleven Guide-lines

This discussion can be summarized in eleven statements concerning the country's strategy of industrial development:

1. We must look for industries that consist primarily of processing of raw materials found in the country (either naturally or as agricultural products). We should avoid industries that depend heavily upon imported raw materials, especially those that are perishable, fragile, or expensive to transport.

   Two raw materials that deserve special attention are:

   a. Natural gas and crude oil, both of which form the raw material base for petrochemical industries. It is particularly important to find uses for the natural gas of Khuzestan that is now going to waste.

   b. Forest resources of the north. The institutions necessary for their successful expoitation must be improved if these resources are to make their potential contribution to the nation's income.

2. We must expand the more important, basic consumers-goods industries so that the country is more nearly self-sufficient in goods which can be produced domestically at reasonable cost. The more important of these goods are textiles, sugar, tea, vegetable oil and other food processing industries.

3. We must develop more industries that support agricultural development. This means not only the fertilizer industry but pesticides, insecticides, seed drills, sprayers, poultry appliances, hand tools, storage facilities, canneries, grain threshing, seed cleaning equipment, animal feed stuffs, dairy plants, pumps and irrigation equipment, etc.

4. We must encourage the growth of construction-materials industries, such as iron and steel, cement, bricks, window glass, tiles, stone-cutting, pipes, metal tanks, structural iron work, cement-blocks, quarrying, window-frames, doors, sanitary ware, refractory brick, etc.

5. We must encourage the natural extension of existing industries into product lines that are closely related to their present activities. This will lead to the

production of greater varieties and higher qualities.

6. We must encourage medium and small sized industries. These fit best with the present organization of Iranian society with its individualism, close personal control of business matters, and lack of public capital markets. This size of industry also creates much more employment for each toman invested than does large-scale industry.

7. We must encourage selected cottage industries that use large amounts of skilled labor, especially rural labor. However we must distinguish between those handicraft industries which have a reasonably hopeful market outlook and those which will probably die out as a result of increasing competition from factory-made products.

8. We must look for additional opportunities for the direct export of raw materials for which there is no adequate domestic market. This applies mainly to minerals, including crude and refined oil.

9. We must avoid most types of heavy complex producers goods and consumer durable goods that require large markets, depend upon imported materials and parts, need heavy investments and advanced mechanical skills. For many years we shall not be able to make such goods at reasonable quality and cost.

10. We should encourage mechanical assembly industries whereever the savings on transport costs are substantial and especially where there are good prospects for "progressive manufacture." (i.e., the gradual substitution of home-made parts for imported parts.)

11. We should avoid those chemical industries that often require heavy investments and high technical skills and depend upon other processed chemicals as their raw materials. Instead we should concentrate on starting basic heavy chemicals made directly from raw materials available in the country -- such as sulfuric acid, soda ash, caustic soda. In some chemical fields where the market is good but the raw materials cannot yet be made in the country, we should encourage enterprises that prepare the end-product from imported raw materials. This applies to some pharmaceuticals, insecticides, pesticides, and detergents. The main advantages to be gained are the savings in transport costs, plus increased employment and skill-formation.

These statements provide some guide-lines for the country's industrial growth in the next few years. We must now translate these general statements into a specific program of investment. This is done in the following chapter.

Section IV

THE INVESTMENT PROGRAM: 1341-46

Introduction: Physical and Financial Targets

In order to achieve the objectives of the industrial program, a set of targets has been established. Some of the targets are expressed in terms of production, employment and levels of investment; others are expressed in financial terms only.

The Plan aims at a gross investment of Rls. 65.16 billion ($ 860.20 mn.). Forty-seven percent of this (Rls. 30.65 bn. - $ 404.60 mn.) will be invested by the private sector. Fifty-three per cent of total investment will be by government. These investments are needed to realize the production targets shown in Tables 4 and 5 and to reach the employment target of 120,000 new industrial and mining jobs. This employment target includes programs for which physical targets have been worked out as well as those for which only financial allocations are set.

The industry program has two parts of approximately equal size. The part for which targets have been worked out consists of a list of physical projects, a list of specific investments described in terms of a number of factories or mines proposed or the additional production being planned or both. The second part consists only of financial allocations, that is, the earmarking of funds for general credit purposes. The financial allocations also include the funds necessary to finance the expansion of Ministry activities from 1341-46.

Ideally the entire program should be spelled out in physical terms. This would mean identifying in advance every new factory and every new addition to existing factories in the public and private sector, together with what they would produce, where each would be located, how much employment would be created, what raw materials would be required, and how much each project would cost. But it is obviously impossible to spell out the details of every new investment whether large or small. So in practice what we do is to identify in physical terms the larger, more important individual projects or programs* and leave the rest to be covered by financial allocations. The use of general allocations does not mean that we have no idea what credits will be used for and have no control over their use. They will be used mainly by private entrepreneurs, who in most cases will have to secure licenses for their projects. Licences will not be issued for projects that push capacity beyond what the country can absorb; they will not be issued for projects that are considered harmful or wasteful of the country's resources. The use of financial/ allocations will thus depend partly upon what private entrepreneurs wish to use them for as expressed in their loan applications. For a policy that relies heavily on private enterprise this is a much more logical approach than trying to lay down a complete pattern in advance, since no government can know, except in a general way, what the detailed pattern of investment ought to be. The number of mistakes made by private entrepreneurs are likely to be fewer than the number of mistakes contained in a detailed government plan.

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* A project is a self-contained investment; a program is a set of related, similar projects designed to achieve a common objective, such as the program to expand sugar output.

1. Overall View of the Program: Financial Magnitudes

Activity in the sector will fall under seven broad headings, as shown in Table 3:

Table 3- Major Types of Industrial Activity

	Investment*	
	mn. $	mn. Rls.
1. Expansion of 11 major existing industries: cotton, wool, cement, vegetable oil, sugar, dried fruit, dates, carpets, leather, glass, canning.	127.05	9,624.04
2. Establishment of major new industries: iron & steel, paper, wallboard, synthetic fiber, petrochemicals.	221	16,740.75
3. Medium & Small scale private industry.	242.15	18,342.86
4. Expansion of government industries: Fertilizer, tobacco, tea, fisheries	15.90	1,204.43
5. Mining	47.5	3,598.13
6. Replacement	178.80	13,544,10

(table continued on next page)

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* This investment is the total net investment in fixed assets plus working capital.

7. Miscellaneous:	mn. Rls.	mn. $
a) Surveys	15	1,136.25
b) Support of foreign technicians	7	530.25
c) Increase in ministry budget	5.8	439.35
Total: Investment	860.20	65,160.16

The above figures do not represent government expenditures alone; they represent total expenditures, public and private, without regard to their financing. The break-down of finance into public and private expenditures is shown below in Table 4.

The program is heavily weighted with large investments in a few industries with large capital requirements: 25 per cent of the funds will be spent on five industries (iron and steel, viscose, wallboard, paper and petrochemicals). However, 28 per cent will be invested in a wide variety of medium and small industries; these industries are extremely important to the employment target of the Plan. Fifteen per cent of the funds will be used to expand existing major industries. Investment in mining is a relatively small portion of the total, namely, 5 per cent. Capital replacements will account for over one fifth of expenditures.

The role of government in the program is a large one. Apart from the government's role in financing a large share of private industry, the government will spend directly approximately 37 per cent of the total funds . The total level of activity in the industry sector will thus be very sensitive to changes in the plans of government.

How does this level of activity compare with industrial investment during the latter half of the Second Plan? The period 1337-1339 was one of very high investment. The best estimates put the figure of annual private investment at $90-110 million excluding $50 million of foreign private investment in oil. During 1339 industrial investment began to fall off and it was not expected that the 1338 level would be regained by 1341. This was one major consequence of the Stabilization Program, which restricted credit and foreign exchange. The Third Plan targets would put private industrial investment at about $ 100 million per year, on average. In view of the time-lag involved in launching programs, the level would probably be somewhat below $100 million during the first two years and would rise to a higher level from 1343 on.

II. Programs Expressed in both physical and financial terms

The part of the program that can be described in physical terms breaks into two parts. The first part consists of the expansion of existing industries. The targets are given in Table 2. below. We have estimated how much production ought to expand in some of the major industries of the country in order to satisfy demand at constant prices. We have then estimated how much investment will be required to achieve this additional production. We also show the increased employment expected in each of these industries. The physical targets concentrate on output. The source of additional output is not divided between the expansion of existing plants and the establishment of new ones.

The second set of physical targets concentrates on the establishment of individual plants that will introduce new industries to the country. These projects are shown in Table 3. Following Table 3 is a series of brief paragraphs describing each project and its present status. At the time of writing the Plan Frame not one of the major projects listed in Table 3 was definite, though all of them were under some kind of study. In our judgment not more than two-thirds of these projects will prove feasible during the Third Plan. Most of them would not be completed until near the end of the Plan or until early in the following period.

A. EXPANSION OF MAJOR INDUSTRIES

The program for expanding 11 of the most important existing industries is summarized in Table 4.

Table 4- Expansion of Major Existing Industries
(Net investment in fixed assets plus working capital; excludes capital replacement)

	Industry	41 Capacity Estimated in 1000	46 Capacity Estimated in 1000	Investment Needed mn.Rls.	mn. $
1.	Cotton textiles	400,000 mt.	430,000	1,500	19,80
2.	Woollen "	7,200 "	9,000	900	11.88
3.	Cement	1,100 tons	1,700	1,405.5	18.56
4.	Vegetable oil	50 "	90	660	8.71
5.	Sugar	230 "	315	2,200	29.04
6.	Dried fruit & nuts	80 "	102	750	9.9
7.	Date packing	40 "	80	150	1.98
8.	Carpets #	Rls.1.3 bn.	Rls. 1.6 bn.	750	9.90
9.	Leather	1,250 pieces	1,700 pieces	472.5	6.25
10.	Glass	28 tons	43 tons	311	4.10
11.	Food preservation.	50,000 units	80,000 units	525	6.93
	TOTAL:			9,624.0	127.05

# Export

These investment figures represent net investment in fixed assets and working capital. The values do not represent the amount of government funds that will be allocated to these industries; this amount will be much smaller. All the above investments, will be in the private sector (this assumes that the present government textile, sugar and cement mills will be sold to private owners or will not expand).

Each of the above industries fits well into the general strategy of industrial development and the objectives of the Plan. All of them draw their raw materials from within the country. All of them will have a favorable effect on the balance of payments. All draw on skills that already exist or that can be easily created. All of them have established markets, though these may need to be enlarged. None requires more capital or a more complex organizational structure than the country is capable of sustaining. All but one of them (cement) have close relations to agriculture and should assist the development of the rural sector. Three of the industries (textiles, wool, and sugar) provide essential consumer goods in which a greater degree of self-sufficiency is desireable. For these many reasons we think there can be no question that these industries deserve a high priority in the country's development effort.

The following notes give a summary of expected developments in each of the above industries:

1. Cotton and synthetic textiles: This industry has expanded very rapidly during the Second Plan. It is estimated that by 1341 the industry will have 14,500 looms. By late 1341 total productive capacity of the industry (including 40 mn. mtrs. from handlooms)will have reached 400 mn. mtrs. This will be considerably in excess of the country's needs. However actual production

in 1341 is likely to be about 290 mn. mtrs of mill cloth plus 40 mn. mtrs. from the handlooms, or a total of 330 mn. mtrs. Imports will be about 40 mn. mtrs., giving a total consumption of 360-370 mn. mtrs.

During the Plan total consumption will rise about 5 per cent annually or by 18-20 mn. mtrs. each year. By 1346 consumption will thus be 90-110 mn. mtrs. greater than 1341, or about 450-470 mn. mtrs. Productive capacity in 1346 should therefore be about 430-440 mn. mtrs., leaving imports at 20-30 mn. mtrs. Per capita consumption in 1346 will be about 18.4 mtrs. Since there will be overcapacity at the start of the Plan with resulting difficult business conditions in the industry, most of the expansion in spinning and weaving capacity will occur in the second half of the Plan. However during the first part of the Plan there will be some integration within the industry to balance the spinning, weaving and finishing capacity.

2. Woolen textiles: This industry has also expanded rapidly during the Second Plan. All investment has been by the private

sector. Expansions and the establishment of new mills increased capacity by 3.2 mn. meters of cloth (excluding blankets, which have accounted for about one-third of mill output in recent years). Total cloth capacity in 1341 is expected to be just over 5 mn. meters; including blankets it will be 7.2 mn. meters. By 1341 consumption of woollen cloth (including blankets) is expected to be 10 mn. meters. From 1341-46 consumption will grow at about 4 percent annually. Partly to keep up with this rise in consumption and partly to subsitute for imports, capacity in 1346 should be about 9 mn. meters. This will require an addition to capacity of 1.8 mn. meters (nearly 25%). Most of this will come from extensions and additions to produce higher qualities and from increased efficiency in existing mills. However, there may be room for one large new mill toward the end of the Plan.

Although Iran is a great-sheep-raising nation, a substantial proportion of its raw wool for factory use is imported. This is because of the low quality of native wools. The Plan is not expected to make much progress in substituting native for imported high quality wool.

3. Cement: This industry will have expanded capacity from 140,000 tons to 1.1 mn. tons during the Second Plan. Beginning with one government mill in 1334, two large government mills, four private mills, and one combined government-private mill were constructed. But consumption grew even more rapidly. In 1339 prices were still very high and imports were being

permitted. Consumption is expected to continue rising and should reach 1.7 mn. tons annually by 1346. The gap of 600,000 tons will require the construction of three major plants (or more smaller ones) of 200,000 ton capacity each. Plants will probably be needed to serve Azerbaijan and eastern Iran, regions now being served by distant mills, with some expansion in Tehran and Khuzestan.

4. Vegetable oil: This industry has expanded rapidly during the Second Plan and will continue to do so. Between 1341-46 consumption is expected to rise 15 percent annually. This will justify an expansion of capacity from 50,000 tons (1341) to 90,000 tons. The major problems in carrying through this expansion successfully will be to overcome the shortage of raw materials. This expansion should take the form of establishing one or two new plants as well as encouraging the expansion of some existing ones.

5. Sugar: The capacity of this industry will have more than doubled during the Second Plan. By 1341 the twelve government beet-sugar mills are expected to produce 100,000 tons of sugar; the new private mills with a total capacity of 100,000 tons should produce another 60,000 tons. Production of these new mills however should approach rated capacity early during the Plan. In addition, the new government mill at the cane-sugar plantation in Khuzestan will be producing 30,000 tons of cane sugar. Total production of home-grown sugar will therefore be 190,000 tons in 1341. Consumption in 1341 is expected to be 420,000 tons. By 1346 consumption will be about 550,000 tons, a growth of 130,000 tons (31 per cent) in 5½ years.

Expansion of domestic production from beets during the Plan will be limited by the rate at which beet production can be increased./ Considering the possibilities of expanding sugar beet cultivation 3 new private factories can be established adding 45,000 tons of capacity, while government mills, traditionally operated at too low a proportion of their capacity, should increase output by 20,000 tons without much additional investment (whether operated as such or sold to private owners). There may also be an additional 20,000 tons from the Khuzestan cane sugar plantation. (It will not be possible to grow sugar cane privately on a commercial scale until after 1346 when a regular flow of water is available from Dez dam). Total 1346 output from home-grown sugar should thus be 315,000 tons. With consumption at 550,000 tons, imports of 235,000 tons will be necessary. Over half the imported sugar will be processed in domestic refineries. The volume of imports in 1346 should thus be 15-20 per cent below the level of 1339.

7. Dried Fruit (including nuts): In recent years Iran has been losing its place in international markets because of low-quality products. The main reason has been lack of attention to quality-control: proper drying, grading, and packaging. During the Second Plan a start was made toward reversing this trend: two modern dried fruit plants were built, one government, one private. Three or four smaller private fruit plants were also started. However, a much more vigorous effort must be made during the Third Plan if Iran's third-largest export industry is to regain its former position.

The government will try to strengthen the interest of private investors in constructing modern plants by giving them preferred credits, free land, technical assistance in the design and operation of plants, and assistance in trade promotion in foreign markets. The number of foreign technicians working in the country will be increased and special efforts will be made to interest foreign investors in participating in one or two packing plants in Iran. No government plants will be built unless the response of private investors is so disappointing that the government is left with no alternative.

The country should be able to increase fruit exports (including nuts) 5 per cent annually on average during the Plan.

8. Date-packing: Date exports have never occupied as important a place in Iran's trade as dried fruit. However, the problems of the industry are very similar to those of dried fruits. Except for a smaller allocation, the program for dates is substantially the same as for dried fruits. Since only 10-12 per cent of the date crop is currently being exported, it may be possible to increase date exports at a faster rate than in the case of dried fruits. The Plan assumes exports can be increased at an average rate of 15 per cent annually.

9. Carpets: This ancient industry is traditionally among the three or four most important foreign exchange earners in the country. It provides more employment than any other industry in the country. The industry has recently begun to suffer renewed competition in foreign markets from other producers of hand-made carpets as it has for many years from machine-made carpets. Some people believe that this is a "dying industry"; however, there is good reason to believe otherwise, at least for the next generation or more. The key question is whether or not active trade promotion can be effective in retaining and enlarging present markets and gaining new ones. During the final year of the Second Plan a special survey of foreign markets is being conducted to prepare the trade program. The Plan proposes major expenditures for trade promotion in overseas markets. These will include easier credits to private merchants to assist their participation in the program. Approximately Rls. 500 mn. ($6.6m.) will be allocated to trade promotion and trade credit. The amount of money to be invested

in improving and expanding domestic production will be relatively small; about Rls. 250 mn. ($ 3.3 mn.) will be used to expand and improve the production facilities of the Iran Carpet Company. Private investment in fixed assets is likely to be negligible and mostly in the form of non-cash activity. However, cash credits will be available for private producers if they need it.

If the trade promotion program is effective, exports in 1346 could be 20 percent higher than in 1338; this would represent a yearly addition of Rls. 255 mn. ($3.36 mn.)in foreign exchange earnings.

10. Leather: this is an old industry with the number of establishments divided between tanneries (19) producing for both domestic and export market and salambur factories (12) which preserve skins (goat and sheep) for export but do not tan them. The number of hides processed by salambur factories for export is about 6 million pieces while the number processed by tanneries for domestic use is over ½ million pieces. Little or no factory-tanned leather and leather goods are exported; while a considerable quantity of sole leather is imported every year.

The main domestic uses for leather are for footwear, luggage, straps and belts, animal harnesses and saddlery, and some book covering. Most of these items use cow and horse leather; very little sheep and goat leather is used domestically. There thus appears to be a considerable imbalance between what the country mainly produces (goat and sheep skins) and what it uses (cow-hide and horse-hide). Expansion of domestic demand will not permit the ready substitution of raw materials now exported for domestic use. The present tannery output of 1 million pieces can be raised to 1.7 million by 1346 through the expansion of existing facilities. The rise in domestic consumption, estimated at 7 per cent annually, will probably require some increase in the import of raw leather. However, encouragement will be given to projects for manufacturing products that are now imported.

Major emphasis of investment in tanning during the Plan will be on modernization and enlargement of existing production facilities, not on the establishment of new factories. However, there is likely to be some opportunity for new factories making leather goods.

11. Glass: There are three main types of glass products: sheet or flat glass, blown or bottle glass, and crystal or pressed glass. In none of these three branches is Iran now self-sufficient at present, although rapid progress is being made toward self-sufficiency in bottle-making. While some specialty items will have to be imported for several years, the industry seems capable of considerable expansion, particularly in the flat glass and bottle branches. The principal raw materials are available in the country. The main problem of the industry will probably be the shortage of technical personnel to assure the constant improvement of products so that a larger and larger proportion of the market can be taken over by domestic firms. Product diversification will be an important means of import-substitution.

Present production of sheet glass is 4100 tons. By 1341 capacity will rise to about 8000 tons. It is estimated that consumption of sheet glass will increase annually by 12%. With 1346 consumption of 25,000 tons and 1341 capacity of 8,000 tons there is a theoretical gap of 17,000 tons. This includes many specialty products, only some of which can be made domestically. Thus there appears room for 8-10,000 tons of new production capacity during the Plan. This will cost about Rls. 200 mn.

The consumption of bottles in 1341 will be 11,000 tons. Since the rise in consumption is 5% annually it will reach 14,000 tons by 1346. The gap between production in 1341 and consumption in 1346 is 3000 tons. This can be produced by expansion of existing facilities through an investment of Rls. 73,000,000 in order to meet the demand.

The estimation of annual increase in crystal glass is 5 per cent. To fill the gap of 2000 tons which will be created by 1341 production of 10,000 tons and consumption of 12,000 tons by 1346, a total of 38,000,000 Rls. will have to be invested to expand existing factories.

12. Food Preservation: If the price of canned goods can be reduced and their quality increased, the industry would seem to have a fairly promising market. This is particularly true for fruits, jams, juices, pickles, and some fish and meats. The market for canned vegetables is much smaller and for soups almost non-existent. In 1337 the country's eight major canneries produced about 3.3 million cans; imports were 3.4 million. Total consumption of canned goods in 1337 may therefore be taken at 6.7 mn. cans. Consumption of preserved foods and juices sold in glass containers is about three times the consumption of canned foods. By 1341 total consumption of 50 mn. cans, bottles, and jars may be assumed. By 1346 consumption may reach about 80 mn. units; 80-90 per cent of this should be satisfied from domestic production. To reach this target of 64-72 mn. units, domestic output would have

to increase by about 25 percent between 1341 and 1346. Much the most important single problem in carrying through such an expansion will be the organization of an adequate supply of raw materials. However, before the above investment is made efforts should be made to study the supply of raw material in the location when the factory is being established. The second most important problem is the training of technical personnel; without trained personnel the loss of output from spoilage will continue to be exceedingly high. The Rls. 525 mn.($6.93 mn)allocated for food preserving will be used for 4 or 5 new factories, some modernization of existing factories, and a considerable expansion of working capital. At the present time no canning factory has established a satisfactory organization for supplying its raw materials; as a result, plant capacity is badly underutilized.

There are also a number of other industries such as chemicals, pharmaceuticals and rubber which will be included in the final Plan after necessary studies have been made.

During the year between the publication of the Plan Frame and the Plan, a number of additional important private industries will be studied to determine physical investment targets for them. In the final Plan, therefore, a higher proportion of the industry program can be expressed in physical as well as financial terms.

B. Establishment of Major New Industries

The program includes provision for establishing major new industries shown in Table 5.

Table 5. Major New Industries

		Investment Needed*		Annual Capacity
		mn. $	mn. Rls.	in 1000
1.	Steel	150	11362.50	250 tons
2.	Paper	20	1515.00	20 "
3.	Wallboard	2	151.50	n.a.
4.	Synthetic fiber	14	1060.50	6
5.	Petrochemicals	35	2651.25	-
		$ 221	Rls.16740.75	

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* Net investment in fixed assets and working capital.

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1. **Iron & Steel:** In the autumn of 1339 the Ministry of Industries and Mines signed a contract with Kaiser Engineers and Constructors, Inc. of Oakland, California, to conduct a feasibility study. This study is due to be completed just before the beginning of the Plan. The estimates used above reflect a judgment as to the type of project that may be recommended by the Kaiser report.

2. **Paper and/or Newsprint:** A paper or newsprint mill based on waste bagasse at Haft Tapeh as the raw material ~~has been proposed~~.

Such a mill would provide a use for the waste sugar-cane pulp which would otherwise be burned. A site in Khuzestan would be next to the raw material and to reliable supplies of electricity and water. It would be on the country's main railway line.

Other studies of paper production have been made during the Second Plan, using other raw materials. However, these alternatives do not appear as promising as the use of bagasse in Khuzestan.

3. Wallboard: This is an interior construction material that can be made from the waste bagasse at Haft Tapeh. A feasibility study for such a plant will be completed early in the Plan. The plant is not a very large one and it may be possible to interest private entrepreneurs in taking responsibility for it.

4. Synthetic fiber: At the present time viscose rayon is the only synthetic textile used in large volume. Two studies of rayon plants are being made by private entrepreneurs with the help of foreign consultants. Preliminary indications are that the projects will not be sufficiently attractive for private sponsorship but would show a low profit. Major disadvantages of rayon manufacture are heavy requirements for water and imported raw materials. Other synthetic fibers can be made which use resources that are more abundant in the country. The completion of studies early in the Plan will indicate what kind of project, if any, is feasible.

5. Petrochemical industries: Petrochemical industries are those which use hydrocarbons (chiefly oil and natural gas) as raw materials for making chemical products. This class of

industries is obviously attractive to a country with abundant supplies of gas and oil. However, it is a waste of money and other resources to build plants unless adequate markets can be found for their outputs. This is the main difficulty in justifying petrochemical plants in Iran today. Part of the difficulty is that many petrochemical plants cannot be built economically on a small scale. In view of these problems, the selection of petrochemical projects requires careful study. It has so far proved impossible to undertake the kind of careful studies required, mainly because the NIOC considers itself the only agency to take up studies on petrochemicals. Nevertheless, NIOC conducted some preliminary studies which suggest possible projects that might be started during the Plan. The studies have concerned the following six petrochemical industries:

a. Liquid gas: a 10,000 ton plant using excess gas from Aga Jari, producing entirely for export. Total cost is estimated at $10 million, half of which might come from foreign participants.

b. Sulfur extraction from gas: studies are under way on a $2 million plant using gas from Haft Kel that would produce 15,000 tons per year. This output is much larger than the country's requirements during the next few years.

c. Carbon black: A plant costing $8 million has also been suggested using gas from Haft Kel. But domestic consumption in the tire, ink, and paint industries would be only about 10-15 per cent of plant capacity, and the outlook for exports is very doubtful.

d. Fertilizer: a 130,000 ton plant at Ahwaz)

e. Plastics: a 5,000 ton plant at Ahwaz) Total cost: Rls. 4.5 billion or $60 million.

f. Artificial fibres: a 2,500 ton plant at Ahwaz.)

There are no definite plans for any of these six plants. The Italian company that has assisted NIOC in studying petrochemical possibilities (Snam Progetti) is continuing its work.

Even if further study should justify a start on one or more of these plants during the Plan it is not clear whether the investments would be made by the NIOC, by other government agencies, by private or foreign investors, or by some combination of these. It should also be pointed out that some of the petrochemical possibilities under consideration by NIOC duplicate projects in which other government agencies and private companies have also expressed some interest. This applies particularly to fertilizer, plastics, and artificial fibres.

The total estimated cost of the above six projects is about $80. However, in view of the great uncertainty surroudning most of these possibilities an allocation of $35 is considered adequate to cover the projects that will prove economically sound. The fertilizer project, however, is dealt with separately.

C. Expansion of Government Industries

Apart from the four industries listed below no expansion of existing government industries is planned, with only minor exceptions. Expansion in textiles and sugar, for example, will come wholly from private investment.

	$	Rls.
Tobacco	8.3 mn.	630 mn.
Tea	0.6	44 mn.
Fisheries	2.0	151.6 mn.
Fertilizer	5.0	378.8
	15.9 mn.	1,204.4

A brief summary of the plans for each industry is shown below.

Tobacco: In 1339 the Tobacco Monopoly produced 8.2 billion cigarettes and 4500 tons of pipe tobacco. In 1341 it is expected to produce 9.4 billion cigaretts and 4400 tons of pipe tobacco. These figures reflect the steady rise in cigarette consumption and the fall in the use of pipe tobacco. Cigarette consumption will probably continue to increase at 7 per cent annually; this will require production of 13.2 billion cigarettes in 1346. Consumption of pipe tobacco in 1346 is expected to have fallen to 4000 tons.

Estimated requirements of the Tobacco Monopoly are as follows:

	Rials
1 new cigarette factory in the north	200,000,000
Completion of provincial buildings & equipment	200,000,000
Special equipment	200,000,000
Replacement expenditures	150,000,000
Foreign technicians and foreign training	30,000,000
Total:	Rls. 780,000,000

Total net investment in physical assets would thus be Rls. 600 million ($ 8 mn.). This plus the Rls. 30 mn. of special personnel expenditures are included in III-I of Table **IV**. The replacement amount is included under IV-2.

Tea: The production of processed tea in 1338 was about 7,000 tons and is expected to reach 12,000 tons in 1341. A production target of 19,000 tons has been set for 1346; consumption is expected to be about 23,000 tons. To process the additional 7,000 tons of domestic production two new tea factories will be needed to handle the newly cultivated area of Tavalesh. These factories will be public unless private investment is forthcoming.

Fisheries

The Fisheries Organization (Shilat) has requested Rls.750 million, ($ 10 mn.), during the Third Plan, mainly for pushing forward with large scale fishing in the Persian Gulf. In the absence of any solid Plan this sum cannot be justified. Moreover since the Pahlavi Foundation and others in the private sector have shown interest in developing Persian Gulf fisheries in cooperation with the government, a much smaller financial committment by the government would be in order.

During the Plan period a $2,000,000 (151,600,000 Rls.) allocation for Northern and Southern Fisheries can be set aside. This fund can be included in the annual Development Budget only if Shilat is able to justify its expenditure; otherwise it will be shifted to other projects.

In any event, fishing, especially in the Persian Gulf, should not be monopolized by the government. Private fishing should be encouraged by a clear statement of government policy and a willingness to issue licenses and make loans for private fishing companies.

There is considerable scope for development of small-scale private fishing in the Gulf. United Nations team made recommendations on this subject in 1335. The most useful approach during the Third Plan would be to request the help of a foreign government whose country is experienced in small-scale fisheries (e.g. Japan or Israel).

Fertilizer: Chemical fertilizers have been introduced to Iranian agriculture only during the Second Plan. The country's first chemical fertilizer plant, at Shiraz, was also begun during the Second Plan and will be capable of supplying 30,000 tons of elemental nitrogen by 1342.[*] There are widely differing estimates of the rate at which fertilizer consumption will grow. Until the trend becomes clear from actual experience, no definite plans can be made for building a second fertilizer plant. However it is possible that construction of a second plant might begin before the end of the Third Plan, and funds are being tentatively reserved for this purpose. If by the end of 1344 it appears that these funds will not be needed they will be released for other uses. At the present time it is not clear to what extent the next stage in expanding domestic production should come from an expansion of the Shiraz plant (whose initial production costs are expected to be very high) or from the construction of a new plant at another location. Expansion at Shiraz should only be encouraged if it will significantly help the economic performance of that plant without imposing too high costs for delivered fertilizer in other regions of the country.

The fertilizer program will also require the use of two small mixing plants during the Third Plan. Experts are agreed that almost all fertilizer sold in the country should be sold as mixed fertilizer (almost all of it as a mixture of nitrogen and phosphate, since potassium does not seem to be needed by most Iranian soils). Total mixing capacity of about 210,000 tons per year will be needed. The Chemical Bongah already operates one small mixing plant, at Karaj. This will probably serve as one of the two plants needed. The ownership and location of the second plant (costing about Rls. 6-8 mn.) have not yet been decided. The most likely locations are Shiraz (at the Shiraz plant itself) and the Khuzestan (where intensive fertilizer experimentation and use is being developed). Fertilizer consumption will probably develop more rapidly if private companies join the government in promoting its use. It is therefore recommended that one of the two mixing plants be placed in the private sector and given a guaranteed purchase contract by government in case private sales prove disappointing. Under such an arrangement, a private company would be assured a minimum profit from sales to government but would be able to expand profit considerably by energetically developing additional private sales.

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[*] Fertilizer production is usually quoted in tons of elemental chemical content, not in tons of bulk weight as delivered to the users. The latter figure is approximately three times the former.

The consumption of bulk fertilizer by the end of the Third Plan, according to present estimates, will be about 210,000 tons of which 59,000 tons is ammonium nitrate and urea, 81,000 tons ammonium sulphate, 57,500 tons triple superphosphate, and 12,500 tons potash.

III. Programs Expressed only in Financial Terms

Three of the programs included in Table 3 can be described at the present time only in general financial terms -- i.e. no specific targets have yet been developed. This applies mainly to the distribution of investment among small and medium industries, the mining sector, replacement expenditures, and the "miscellaneous" development expenditures. Summary explanations of these four allocations are given below.

A. Mining: The government is studying three or four mineral deposits that could lead to major investments. These major possibilities include the Kerman iron ore, potash in Lake Rezaieh, sulphur in Fars, and a lead-zinc smelter. It is unlikely that more than two of these four possibilities, at most, will prove feasible. However, much the largest activity in the mining sector would result from the starting of a fully-integrated iron and steel project. This is not expected during the Third Plan. When and if such a project is started it will require not only very large iron ore operations but a large expansion in the production of metallurgical coal. An integrated steel project would also require several other mineral inputs.

Private investment will be highly concentrated in chromite, lead and zinc, and quarrying for construction materials. The major recommendations for an expanded program of government services to assist mining are contained in section IX below.

B. Medium and small-scale industry: The program for this sector consists almost entirely of credits and improved policies and government services to help private industry. Very little of the program is expected to be translated into physical terms before the Plan is published.

C. Replacement (depreciation): This figure represents the amount of expenditures needed to replace the old and obsolete capital equipment that will wear out during the Plan. The amount is at best a very crude estimate; it constitutes 26 per cent of total investment in fixed assets (Rls. 6.5 bn. minus Rls. 0.9 bn. for working capital and Rls. 0.2 bn. for "miscellaneous" expenditures). The replacement figure is based on an estimate of the stock of industrial capital in existence and an assumption that 6 per cent of this will be replaced each year.

The two largest and oldest industries in the country (textiles and sugar) will probably have relatively heavy replacement expenditures. But very little is known about the probable amount of replacement expenditures needed in each industry.

D. Miscellaneous expenditures: Items 1 and 2 are explained in Table 6 and sections X and XI below. To the amount of Rls. 189 mn. ($ 2.5 mn.) allocated for matching support of private surveys has been added the sum of Rls. 757 million ($ 10 million) to cover government-arranged surveys for both Third and Fourth Plan projects.

The increase of Rls. 439 million for the budget of the Ministry of Industries and Mines is based on an average annual increase of 10 per cent, beginning with the 1340 budget as a base. Both the base and the annual increase include both the ordinary and the special budgets of the Ministry. The resulting figure is of course cumulative for the entire Plan period.

Financing the Program

Table 6 below shows in outline form how the program will be financed. The table should be read in connection with Table 3, 4, and 5 of this chapter and with the chapter on Capital and Credit.

The total amount of development expenditures for industry and mining will be Rls. 65.2 billion ($ 860.2 mn.). This is the value of all public and private investment expenditures for new capacity, for replacement of old capacity, and for additional operating capital for both old and new enterprises. It also includes the "miscellaneous" expenditures listed at the end of Table 4. The figure represents the total amount of capital-formation of all kinds in industry and mining during 1341-46, plus the "miscellaneous" development expenditures.

How will these expenditures be financed? Government funds will finance just over half the total -- 53 per cent compared with 47 per cent financed from private sources. Both government and private funds will be made available in many different forms and through several channels. For example, the government will spend some money on direct investments, some in the form of loans for new plant and equipment, some in the form of advances to private banks for re-lending as industrial working capital. The institutional allocations of government funds are indicated in the chapter on capital and credit. Similarly, private funds will come not only from savings generated within Iran and made available through this country's financial institutions; private financing will also come from foreign investors, foreign lending agencies, and foreign suppliers of machinery and equipment. (these same forms of foreign private capital will also be available for financing some of the governments investment). The basic division of financing into "government" and "private" shown in Table 4 must be understood, therefore, as a crude summary of a very complex set of financing institutions and arrangements. The table makes clear the heavy dependence of all parts of the program on government financing.

Not all the cost of the development activity will be fully paid for by the end of the Plan; some will be financed by borrowing and part of this will be repaid after 1346. Private investors will enter the Plan with some indebtedness to suppliers. During the Plan they will continue to pay back ~~their~~ debts while they also secure new loans from suppliers. It is assumed that the repayments of previous debts and the receipt of new loans during the Plan will practically balance each other. The government will find itself in the same position. We have therefore assumed no net change in the amount of suppliers' credits outstanding between the beginning and end of the Plan. Such credits would of course be classified as "private financing."

Foreign exchange requirements: It is estimated that 40 per cent of the total expenditures will have to be made in foreign exchange. This amounts to Rls. 26 billion or $ 344 million. The use of a 40 per cent figure reflects a weighted averaging of foreign exchange components that vary from 20 to 70 per cent for different parts of the program.

Table 6. The Financial Framework
In millions

	Government		Private		Total	
	Rls.	$	Rls.	$	Rls.	$
Private Industry						
1. Expansion of major Existing Industries	2,420.21	31.95	7,203.83	95.10	9,624.04	127.
2. Establishment of major new industries: paper, wallboard, viscose.	1,636.20	21.60	1,090.80	14.40	2,727.0	36.
3. Medium & Small scale Industries.	3,401.18	44.90	14,941.69	197.25	18,342.86	242.
Sub-Total	7,457.59	98.45	23,236.31	306.75	30,693.90	405.
Mining						
1. Private	659.03	8.7	666.60	8.8	1,325.63	17.
2. Public	2,272.50	30.0		-	2,272.50	30
Sub-Total	2,931.53	38.7	666.60	8.8	3,598.13	47.
Govt. & Semi-Govt. Industries.						
1. Fertilizer, tobacco, tea, fisheries, etc.	1,204.43	15.90		-	1,204.43	15.
2. Petrochemicals	2,651.25	35.00		-	2,651.25	35.0
3. Steel	11,362.50	150.00		-	11,362.50	150.0
Sub-Total	15,218.18	200.90		-	15,218.18	200.9
Replacement						
1. Private Industries	2,121.00	28.00	6,363.00	84.0	8,484.00	112.0
2. Public "	4,681.35	61.80			4,681.35	61.8
3. Private mines	34.09	.45	193.16	2.55	227.25	3.0
4. Public mines	151.50	2.00		-	151.50	2.0
Sub-Total	6,987.94	92.25	6,556.16	86.55	13,544.10	178.8

Miscellaneous	Government		Private		Total	
	RIs.	$	RIs.	$	RIs.	$
1. Surveys	946.88	12.5	189.38	2.5	1,136.25	15.0
2. Support of foreign Technicians.	530.25	7.0			530.25	7.0
3. Increase in Ministry Budget	439.35	5.8			439.35	5.8
Sub-Total	1,916.48	25.3	189.38	2.5	2,105.85	27.8
Grand total:	34,511.72	455.60	30,648.44	404.60	65,160.16	860.20

Section V

Controlling the Pattern of Investment

The Plan will spell out the desired pattern of industrial investment. In some parts the Plan will be detailed and specific, in other parts it will be quite general. To encourage desired projects several different tools of policy will be employed - tariff protection, easy credit terms, direct investment by the government, government purchase contracts, and other means. To discourage unwise projects the main tool will be an effective system of industrial licensing. This will require major improvements in the present licensing system.

An effective licensing system is essential for two reasons:

1. By requiring all projects over a minimum size to secure a license it provides centralized information about what investment is occuring. (Projects of less than Rs. 2 mn. will be exempt from licensing).
2. It provides an easy method of preventing undesirable projects from going ahead. If a promoter fails to get a license for his project, he will automatically be denied a building license, a government loan, import credits, the release of goods from customs, power connection, etc.

The main objective of licensing is to provide the information on and control of production capacity needed by both government officials and private investors. Orderly record-keeping in the Ministry's licensing office will permit frequent analysis to determine if excess capacity is arising and will warn entrepreneurs to avoid such fields. A major responsibility of the licensing office should be the regular, prompt publication of a bulletin showing the progress of investment plans in each industry as shown by licenses issued.

The licensing system must be comprehensive. No private individuals and no public agencies should be exempt from the requirement.[*] If this is not done there will be wasted energies in planning, duplicate investments where there should not be, and certain individuals will be put in a position of unfair privilege.

The licensing authority (to be known as the National Licensing Board) will have great power over the pattern of investment. It must therefore be a respected and representative body. Its composition should include representtatives of the following bodies.

The Ministry of Industries and Mines (ex-officio Chairman)
The Bank Melli or Central Bank
The Industrial and Mining Development Bank of Iran
The Plan Organization
The Ministry of Labor

In a strictly legal sense, it will be the Ministry of Industries and Mines that issues licenses; the role of the National Licensing Board will be only advisory. However, it is expected that the Ministry will act in accordance with the recommendations of the Board. Whenever the Ministry's decision runs counter to a Board recommendation, the published record of the decision should show this fact.

The licensing system must be simple, prompt, and fair. To achieve these objectives will require careful advance planning. The National Licensing Board should therefore be appointed in 1340 so that it can organize the licensing system well before the Plan starts. The Board should include within its terms of reference a review of the present system of company registration and should make recommendations for any desired changes in the law, regulations or procedures governing this related subject.

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[*] Non-industrial investment in the oil industry should be exempted.

Some suggestions on procedure:

1. A decentralized licensing procedure would speed up decisions. This could be achieved by having a National Licensing Board in Tehran to review all applications for projects costing Rls. 6 mn. or more and Ostan Licensing Boards to review applications for projects between Rls. 2 mn. to Rls. 6 mn. (Ostan Licensing Boards were used successfully during the last three years).

2. Ostan Licensing Boards would need guidance concerning new capacity needed and, especially, industries in which additional investment is not needed. It would be a responsibility of the National Licensing Board to publish (every 6 months) a list of industries or products for which no additional investment is desired. Industries with purely local markets could be identified and each Ostan Board could publish its own list of "prohibited investments" for areas within its responsibility.

3. Both the National and Ostan Boards should issue a publication every two months reporting decisions taken on license applications. These publications should show in the case of each license issued the following information:

Name of company and owner(s)
Location of company
Product(s) to be made
Annual production capacity
Size of investment
New establishment or expansion
Amount of import duty and commercial benefit tax

4. The Licensing Boards should hold monthly meetings to make sure decisions are made promptly. Written recommendations by the appropriate officials of the Ministry of Industries and Mines should be circulated to Board members at least one week in advance of each monthly meeting.

5. Ostan Boards must report full details of all decisions to the National Board. The latter must see to it that the licensing office in the Ministry publishes an informative report on licensing activity at least every six months.

6. A suggested license application form is attached hereto.

Action To Be Taken If Targets Are Not Being Reached

The Plan has proposed several major industrial projects and has established production targets for all major industries. Some of these targets are expected to be achieved by private investment, some through government investment. The breakdown of private and public investment is shown in Table 6.

What should the government do in cases where private investment lags so seriously that the targets are in danger of being missed by a wide margin? A distinction must be made between (1) existing industries and (2) new industries.

1. Existing industries: Targets have been set for several industries that have already been established in Iran. In these industries there exists a body of private investors who know the possibilities and problems of the industry -- its profitability, sources of raw materials, skill requirements, marketing and sales problems, investment requirements, and so on. In addition to private knowledge of these industries it must also be assumed that the government will do its best to help private investment — meet the desired targets. Therefore if some targets seem in danger of not being met, it must mean that either the original targets were not realistic or there must be unforeseen facts discouraging further private investment in those industries. Thus there must come a time during the Plan when (1) these targets must be revised downwards, (2) government policies towards the industry must be revised, or (3) the government must decide to step in with direct investment of its own.

A major objective of the industrial statistics program must be to keep track of progress in meeting the Plan targets. A systematic progress-report should be prepared annually by the new office of Economic Analysis in the Ministry; this report will reveal whether or not progress toward meeting specific targets is satisfactory. If by the beginning of the fourth year (Mehr 1344) it appears that certain targets are unlikely to be reached, then a decision must be made as to whether the original targets were poorly set or, if not, what additional stimulus might be given to private investors to secure the desired increase in capacity. Only in rare and important cases should the government consider direct investment of its own as a means of overcoming a specific investment deficit.

Where original targets appear to have been set too high, they should be revised downward. Such revisions (upwards or downwards) should of course be made at any time during the Plan as early as the facts support such revisions, and not only at the start of the fourth year.

(2) New industries: For new industries the government wants to introduce into the country under private sponsorship[#] there will not be any entrepreneurs familiar with the industry, unless some have become familiar with it abroad. Consequently the failure of private investors to come forward within a reasonable time (during the first two years, say) is somewhat more serious. Where there is no prospect of private investment appearing and the project continues to look important, the government

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[#] These include: caustic soda and chlorine, newsprint, paper, soda ash, wallboard, animal feeds, sulfuric acid, refractory brick.

should take up the project for direct investment, preferably on a temporary basis with the thought of selling the plant as soon as a suitable private buyer shows interest.

The type of adjustments in Plan targets and policies discussed above should only be made after thorough discussions among Plan Organization, the Ministry, and the IMDBI. The latter institution is undoubtedly in a better position than any other to predict the behaviour of private investors and to suggest particular investors who might be persuaded to take up projects the government wishes to see move forward under private sponsorship.

Section VI

Economic Effects on Employment, National Income, and the Balance of Payments

A. Additional Direct Employment

The Plan for industry and mining should create directly about 120,000 new jobs. This estimate is subject to a wide margin of error; nevertheless, it is believed to represent the correct order of magnitude. The number of new jobs expected in all industries for which financial allocations are made are given in the following table:

Table 7. New Jobs in Selected Areas of Industries

1.	Cotton & Synthetic textiles	2,000
2.	Woollen textiles	500
3.	Cement	600
4.	Vegetable oil	300
5.	Sugar	1,000
6.	Fertilizer	300
7.	Dried Fruit & nuts	400
8.	Date packing	200
9.	Carpets	500
10.	Leather	200
11.	Glass	330
12.	Canning	1,000
13.	Petrochemicals	200
14.	Steel	1,000
15.	Newsprint	250
16.	Viscose rayon	300
17.	Wallboard	70
18.	Tea	60
19.	Tobacco	500
20.	Fisheries	200
	TOTAL:	9,910

"New jobs" refer to those that will be in existence after the investments are completed; they exclude employment created during the construction stages.

The 20 industries listed in Table 1 will account for the investment of Rls. 27.6 bn. ($ 364 mn.). This is 55 per cent of the total net investment in industry and mining. The average capital/employment ratio for these 20 industries is high -- over Rls. 2.8 mn. ($ 37,000) (Rls. 27.6 bn. divided by 9910). Most of the rise in employment in industry and mining must therefore come from the 45 per cent of net investment that will occur outside the major, "visible" industries. It will have to occur in the mining and "medium and small-scale" sectors. Since mining investment is relatively small, mining employment is expected to rise only moderately. Therefore the main burden of creating new employment must fall on the medium and small-scale sector.

Net investment in mining plus medium-and-small-scale industry will be about Rls. 22 bn. ($290 mn.). Experience in other similar countries suggests that the capital/employment ratio for these sectors may lie between Rls. 151,500 and Rls.303,000 ($2,000 and $4,000). Using these figures, the investment of Rls. 22 bn. will create between 72,000 and 144,000 new jobs (average: 108,000). Adding the 9,910 new jobs expected from the 20 listed larger industries, total employment should rise by between 82,000 and 154,000. As an overall target we have used a figure of 120,000 new jobs (a rounding of the average between 82,000 and 154,000).

Present employment in industry and mining is probably about 400,000 - 450,000 (this includes the large carpet-weaving and artisan sub-sectors). The Plan will therefore expand industrial employment by 25-30 per cent. Even a 30 per cent rise would be modest in view of the large amount of money being invested and the necessity for industry to absorb more and more of the labor force.

Two reasons explain why the industry program is unlikely to generate more than a modest rise in employment: (1) several plants (and particularly the textile industry) already have far too many employees and much new investment will do little more than absorb the surplus; (2) a fairly large part of the program consists of projects that use much capital but not much labor. We may expect that a considerable amount of indirect employment opportunities (in construction, transport, repair services, wholesale and retail selling) will be generated by the program. However, it is impossible to measure the amount of indirect employment.

There is one important conclusion to be drawn concerning employment: so far as direct employment is concerned, it is very important to sustain a high level of investment in medium and small-scale industry.

B. Contribution to Higher National Income

The investment in industry and mining will create between Rls. 18.3 and 21.9 bn. ($240 to $290 million) additional national income over the Plan period. This figure is derived by assuming that the relationship between additional capital investment and additional output will lie between 3 to 1 and 3.6 to 1. This means that it requires 3 (to 3.6) additional units of capital to produce one additional unit of annual output. Averaging the additional income over the Plan, it means an increase of Rls. 3.3 to 4.0 bn. ($44 to $53 mn.) each year. Since national income will be increasing at an average rate of about Rls. 18 billion ($240 mn.) annually, the industry sector will be contributing 18 to 22 per cent of the increase. Only one other sector, agriculture, is likely to make such a large contribution to the increase in national income.

C. Effect on the Balance of Payments

The net effect on the foreign balance will be the sum of the rise in export earnings plus the net reduction in imports. The tables below show that by 1346 there may be a net improvement of Rls. 2.7 to 4.2 billion ($ 35 to 55 million) arising from the industry sector. By "net improvement" we do not mean an improvement over the 1341 figures. We mean an improvement over what the 1346 figures would be if no industry investments were made. These figures make no allowance for the indirect effect of higher incomes leading to higher imports.

The calculations on which the foregoing result is based are given in the two tables which follow.

Table 8. Industries Contributing an Increase in Export Earnings

Industry	Incr. in '46 over '41 ($mn.)
1. Dried fruits & Nuts 25% incr. on $20 mn.	5
2. Carpets 10-15% on $16 mn.	2
3. Chromite 100,000 incr. at $25 per ton	2.5
Total:	$ 9.5 (about $10 mn. - Rls.757 mn.)

Table 9. Reductions in imports Arising from Plan Investments

Industry	Gross value of output in 1346* ($mn.)
1. Sugar: 125,000 t. at $100/t	12.5
2. Textiles: 30 mn. mrs. at $30/m	9
3. Vegetable oil: 10,000 t. at $300/t	3
4. Mechanical assembly plants	5
5. Drugs, cosmetics, toiletries	3
6. Chemical products	5
7. Cement: 200,000 t. at $25/t	5
8. Rayon	4
9. Paper: 20,000 t. at $180/t	3
10. Miscellaneous	5
11. Iron and steel: 100,000 t. at $20/t savings	2
TOTAL:	$ 56.5*
	(Rls. 4.279 billion)

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* This is the estimated c.i.f. value of goods that would be imported if the investment were not made. The cost of producing these import-substitutes involves offsetting indirect costs that require the expenditure of foreign exchange. We estimate that these indirect foreign payments will come to about Rls.1.515 bn. ($20 mn.) in 1346.

THUS THE NET EFFECT OF REDUCED IMPORTS WOULD BE ABOUT ($36.5 MILLION) Adding Rls. 2.8 billlion ($36.5 million) to the Rls. 757 million ($10 million) of additional exports gives a total net improvement of Rls. 3.6 bn. ($46.5 million) for the year 1346. This figure is subject to substantial uncertainty. It is more useful to think of the net improvement as lying between Rls. 2.7 and 4.2 bn. ($ 35 and $55 million).

Section VII.

CAPITAL AND CREDIT FOR PRIVATE INDUSTRY AND MINING

The Second Plan saw the introduction of a large program of government long-term credit for private industry and mining and establishment of an industrial development bank. These were the two most important developments in the supply of capital for industry and mining. Both were useful and productive innovations but they did not reflect a coordinated approach to the problem of industrial credit. The next Plan will provide more money for a greater number of credit needs and will reach more borrowers in more parts of the country. The Plan contains an allocation of Rls. 12.9 billion ($170.3 million) to meet the industrial credit needs of the private sector. This sum consists of Rls. 10.3 billion ($ 135.6 million) in new funds and Rls.2.63 billion ($34.7 million) from the repayment of rial revaluation loan fund. The banking system will add about Rls. 8.31 billion ($109.7 mn.) to this figure, bringing total availability of credit to Rls. 21.21 billion ($280 million). The banking system resources will include Rls.5.681 billion ($75 mn.) from the Industrial and Mining Development Bank of Iran and Rls. 2.63 billion ($34.719 million) from the resources of private banks.

The credit program will

1. Continue to rely on the IMDBI for long-term loans to long-scale industries and mines. IMDBI will have nearly Rls. 7 billion ($ 113.5 million) to lend on loans of Rls. 4 million ($52,000) or larger. The sum of $ 113.5 million consists of $ 75 million from the

Bank's own funds and Rls. 3.33 billion ($ 44 million) of new Plan Funds.

2. Continue in modified from the policy of making available government funds for the long-term capital requirements of medium and smaller industries. Bank Melli and Plan Organization's Industrial Credit Bank will extend these loans. But the Ministry of Industries and Mines in cooperation with the Central Bank and the Plan Organization will improve loan standards. About Rls. 5.2 billion ($ 68.9 million) will be available for this program, of which Rls. 3.33 billion ($ 44 million) will be allocated to BMI and Rls. 1,886.17 billion ($ 24.9 million) to ICB. Rls. 2.63 billion ($ 34.719 million) of this amount comes from the Rial revaluation held with BMI and Rls. 2.59 billion ($ 34.2 million) from new Plan funds.

3. Add a new program of hire-purchase (installment) credits to finance purchase of machinery, quipment, and tools by smaller industries and workshops. This program will be administered by selected private banks and Bank Melli under regulations issued by Bank Markazi. Rls. 833 million ($ 11 million) will be devoted to this purpose. (Appendix A gives an account of a similar program operated successfully in Burma).

4. Add a major new program of working-capital credits to meet the needs of all sizes of industry for operating funds. This program will be administered by selected private banks and Bank Melli under regulations issued by Bank Markazi. Rls. 3.4 billion ($ 45.40 mn.) will be available for this program.

5. Add an experimental program of credit designed to meet the financial needs of the very small industries found in urban bazars. A special fund will be established and administered by selected private banks and by Bank Melli. An initial allocation of Rls. 75.75 million ($ 1.0 million) will be allocated to Bank Markazi for this purpose. These funds will be released to approved individual banks by Bank Markazi. Apart from unfamiliarity with these very small establishments, the cost of making and servicing loans to them would be high. To overcome this high cost and to give an incentive to banks to develop this class of business, a special fund will be established for loans of Rls. 40,000 or less. These loans can be for any purpose. For loans of this size or smaller approved banks will be able to borrow funds from the Central Bank at a cost approximately half that used for other types of credit programs. A maximum interest charge to the final borrowers will also be established. Since the program is experimental, the initial fund will be small (Rls. 75.75 mn. or $ 1 mn.), but it could be expanded easily if experience shows that the program successfully meets the needs of this class of borrower.

The program does not propose the creation of any major new government institutions. Public credit will be distributed through the existing banking system. The sectors of industry that will probably be most difficult to help are (1) the very small artisan workshops characteristic of urban bazars and (2) small-scale rural industries. Both sectors are eligible to participate in the credit programs which the banking system will administer. But it is probable that the banking system will not be able to make effective arrangements to serve these very small establishments unless given special incentives. If the special survey of small-scale industry to be conducted early in the Plan shows that new credit institutions are needed and feasible, such institutions can be started during the second half of the Plan.

In addition to its normal credit activities, the IMDBI will help finance, from new funds made available to it, private projects which require special financing. These include projects which could not raise enough private capital unless specially supported by special public funds. A modest beginning may be made in organizing a share market although the time is not considered ripe for any rapid development of public share issues or markets for trading them.

* * *

The credit program that began in 1336, operated jointly by the Ministry of Industries and Mines and the Bank Melli, was financed from the rial revaluation fund. It provided Rls. 3.5 billion ($ 45.5 million) of long-term capital for new and existing industries of all sizes. Its normal interest charges were fixed at 6 per cent for industry, 4 per cent for mining. In general, the standards for making loans were not high. Thus the rial revaluation fund provided a large stimulus to the volume of investment but many projects have subsequently come into difficulties. Several of the loans are expected to go into default and many others will require renegotiation to permit the companies to survive.

The establishment of the Industrial and Mining Development Bank of Iran in 1338 provided an institution with Rls. 3.2 billion ($ 42.4 million) in resources. As a matter of initial policy individual loans would not be less than about 5 million rials ($65,000).

The new bank eclipsed the somewhat older Industrial Credit Bank, a direct subsidiary of Plan Organization which had administered a modest program of long-term loans to medium and smaller-scale industries. The IMDBI has used loan standards much stricter than those used by the Ministry and Bank Melli in administering the revaluation fund: a more thorough technical evaluation is required, a more complete economic study is made, full financial statements must be prepared by the applicants, and applicants must show that they are willing to carry a reasonable share of the risks. In addition, the Bank's interest charges (including surcharges) have averaged about 10 per cent.

Loan Standards and the Volume of Investment: -

One result of the higher standards used by the Bank is the lower volume of its loans as compared with loans from the revaluation fund. With the exhaustion of initial payments from the latter fund in mid-1339 and the lower volume of loans being made by the new Bank, industrial investment began to fall. The Third Plan thus faces a choice between supporting a high volume of investment through "easy" loans and a somewhat lower level of investment accompanied by a badly-needed improvement in lending standards. To raise the loan standards of Ministry-Bank Melli loans we will rely on the organization of a new Industrial Loan Department in Bank Melli, and on improved loan evaluation procedures required by the Central Bank.

We have referred to the need to improve lending standards. The main improvements concern the following areas:

a. Greater attention to the whole capital structure of industrial borrowers. There are two main weaknesses: (1) frequent undercapitalization, that is, companies started with and trying to operate with too little capital, often because they have neglected to take account of their needs for working capital; and (2) the low proportion of equity capital in the total structure. Industrialists cannot except to borrow other people's money if they are unwilling or unable to raise a reasonable amount of capital and are unwilling to bear the main risks.

b. Greater care in the preparation and planning of new projects.

c. Better accounting (even many large firms are unable to prepare routine financial statements)

d. Higher standards of financial reporting and financial management.

e. More attention to market conditions.

Outline of the credit program:

The plan's credit proposals are summarized in the following table:

Table 10. Outline of Industrial Credit Proposals

Type of Credit	Credit Institutions
Long-term:	
Large industries & mines	IMDBI
Medium & small factories & Mines	BMI and ICB
Artisan workshops (bazars)	Private banks BMI
Hire-purchase: (for tools & equipment)	
All sizes	Private banks, BMI
Working Capital (under 1 year)	
All sizes	Private banks, ICB, BMI.

These outline proposals cover the main credit needs of different sections of industry and mining. They show the institutions through which credit will be distributed. These proposals will require major changes in the relation of the private banking system to Industry . For example, the bank's traditional reliance on personal forms of collateral may have to change so as to permit industrial raw materials and finished goods to serve as collateral. This in turn may require industrial firms to construct separate warehouses and to develop more systematic control over inventories to be used as collateral. Banks will have to develop staffs who are familiar with the financial needs of industry and who understand the difference between safe and unsafe financial practices in industry. Industrialists must learn to prepare much better accounting and financial reports as a basis for securing bank loans. To gain a better understanding of these problems before the Plan begins, there should be a special conference for seminar

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on industrial credit problems during the winter of 1340. This should be attended by bankers and government personnel responsible for developing the details of credit proposals for the Plan.

A major new role in financing long-term as well as short-term needs is proposed for Bank Melli. To organize properly for this work Bank Melli should establish a new Industrial Loan Department.

It is not expected that all private bank would desire or qualify to participate in the hire-purchase or working capital programs.

Where will the money come from to finance this extension of private banking operations? Most of it would come from the government's development funds, which will be used to establish lines of credit that banks can use as they need it (money will not be advanced to the banks in advance of their actually making loans). To participate in the hire-purchase and working capital programs private banks must be willing to devote a certain proportion of their own funds to these program. In return, the banks will be given a large amount of low interest government funds to work with.

A Plan Frame cannot settle details of a program. This can only be done by specialized study by people who will operate the program. Therefore it is important to use 1340 as a year of detailed preparation of the credit program. Bank Markazi will appoint specialized committees to work out details of the program in cooperation with suitable cooperating agencies (including the Ministry of Industries and Mines, Plan Organization, IMDBI, and private banks. Among the details to be settled (mainly Bank Markazi) are the following:

The selection of participating banks and the terms of their participation.

Measures for assuring adequate technical appraisal of loans for fixed assets.

Formulation of desireable loans standards

Control of possible abuses by banks and by borrowers

Acceptable forms of collateral and their supervision

Drawing up of standard loan application forms

Interest-rate policy and the use of special fees

Possible use of government loan guarantees or insurance.

Experience with the new Industrial Guarantee Fund, started in 1340, should be helpful in finding answers to many of these questions. So too would be the experience of nearby countries faced with similar problems. (see the material from Pakistan and Burma printed as an appendix to this chapter).

A word may be said on the general level of interest rates to be charged for industrial loans. A major objective of the credit program is to bring reasonably priced credit within reach of all types of industry and mines. In the past, the price of credit available from private institutions has been far too high. The main reason for these high rates (ranging from 15-30 per cent and even higher) is not merely the scarcity of capital in relation to the demand for it. The main reason for high interest rates has been the heavy risks involved in loans. These risks have been a mixture of political, legal, institutional and economic factors which private lenders could not bear without charging high rates. The government can afford to bear these risks much better than private lenders can. Therefore, since the major source of credit will come from the government's development funds, interest rates should be lower since they do not need to cover the heavy risk element included in private loans. In general, we think it more important to regulate the volume of credit by careful selection of loans through improved loan standards required of borrowers and control of banks through Central Bank rediscount policy than by the interest rate. Another way of stating this point is that high interest rates are unlikely to be effective in educating borrowers to better managerial and financial practices; a lender's insistence that borrowers meet such standards can do much more.

Credit Policy and The Pattern of Investment:

There is some room for using credit policy to influence both the volume and pattern of investment. There are two parts to the problem; (1) encouraging investments that are wanted and (3) stopping investments that are not desired. In general, the main tool for preventing undesirable projects will not be credit policy; it will be the improved licensing system described on pages 58-61 however, easier credit terms will be one incentive to encourage investment in priority industries, such as export industries.

Development of a Share Market:

Iranian industry and mining is developing without any satisfactory institutions for collecting private savings and making them available for use in industry on an impersonal basis. There is no organized share exchange. Most equity capital is raised privately among friends and family members. In the future, as larger and larger industries are created, there will be increasing need to finance the equity portion of the capital by collecting sums from a much wider and hence more impersonal market. Already there is some habit of share-hodling among the public with respect to bank shares. Two decades ago there was a lively share market in the Esfahan textile industry, but subsequent abuses and public disillusionment killed the market.

An impersonal share market depends upon confidence among investors that their funds are being properly used and that appropriate remedies exist when funds are being misused. The knowledge on which confidence is based must come mainly from the publication of reliable and informative financial reports. At the present time very few Iranian companies publish any kind of financial reports; few possess the accounting skills to do so even if they wanted to. A major exception are the banks, which do publish annual reports, although these are not subject to independent audit.

Nothing more than a slow and modest start on the organization of a share market can be expected during the Plan period. Before anything serious can be done the level of accounting skills must be raised substantially (a major training objective) and companies must become much more willing to employ accountants and publish financial reports. Few companies are likely to do these things voluntarily. Legal requirements are unlikely to be effective. The most effective pressure for better accounting and financial reporting must therefore come from the banks. If they are to secure honest reports from their borrowers, an attempt must be made to introduce the practice of independent audit. However, shortage of trained personnel and traditional attitudes of financial privacy will prevent rapid progress in this field.

During the second half of the Plan, after accounting skills have spread somewhat and the IMDBI has experimented with some private share distributions, the time may be ripe for organizing an exchange for public trading in the shares of few firms able to meet strict registration standards.

Costs of the Credit Program

The allocation required to finance the foregoing credit program is Rls. 12,900.22 mn. ($ 170.3 million). The cost of each part of the program is as follows:

	Dollars	Rials
Long-term credits		
IMDBI: $8 mn. per year. for 5½ years	44 mn.	3,333.00 mn.
BMI: $8 mn./p.a. for 5½ years	44 mn.	3,333.00 mn.
ICB: $4.5 mn./p.a. for 5½ years	24.9 "	1,886.17 "
Hire-purchase		
$2 mn. p.a. for 5½ years	11.0 "	833.25 "
Working capital		
Starting with Rls. 1136 mn. ($15 mn.) 1st year and falling to Rls. 378.75 mn. ($5 mn.) in final two years.	45.40 "	3,439.050 "
Experimental program for urban bazars		
Small loans for equipment, tools, and operating capital.	1.0 "	75.75 "
Total:	170.3 "	12,900.22 "

The above credit sources consist of Rls. 10.3 bn. ($135.6 million) of new funds plus Rls. 2.63 bn./($34.7 mn.) from the rial revaluation fund. In addition to these credits, approximately Rls. 8.3 bn. ($110 mn.) more credit should be forthcoming from the banking system's own resources. The most important of these private bank resources will be the Rls. 1.03 bn. ($13.6 mn.) supplied each year by the IMDBI. These additional IMDBI funds will raise the long-term credit available from that institution to about Rls. 8.6 bn. ($ 119) during the Plan.

It should be understood that the above credit programs are not fixed and unchangeable. They represent objectives that appear to meet the main credit needs of industry and mining and the ability of various credit institutions to satisfy these needs. But changes in the use of funds can and will be made during the Plan in the light of experience. Institutions which fail to develop a capacity for making effective use of the funds allocated to them will not be given their allocations, which will be shifted to other uses.

Section VIII.

Proper Role of Public and Private Investment in Industry

The increase in private investment during recent years has been very promising and reveals the fact that the private sector, if given proper incentives, will take a much larger role in industrial development during the Third Plan than it did in the Second Plan.

The inefficiency of the government in the business management of its industrial enterprises, the scarcity of funds available to the government for the implimentation of the Third Plan and the wide range of activities required to be taken by the government all point out to one conclusion, namely, that the government should encourage the private sector to take as large a role as possible in the development of industries. In other words it would be better for the government to lighten its burden and not to take on such functions which the private sector is willing to undertake and can manage more efficiently than the government.

A fundamental change has fortunately occurred, during recent years, in the government policy toward private investment. The production of sugar which was, until recently, a government monopoly was opened to the private sector which reacted quickly in establishing sugar mills. Furthermore the government announced its willingness to sell some of the government factories. However, the sales policies have not attracted private investors; a new policy on the selective disposal of government factories is outlined at the end of this section.

The role of government in connection with industries to be established during the Third Plan should be confined to those activities which the private sector does not enter either because they are traditionally the responsibility of the government or because they involve heavy risks or capital expenditures. These include iron and steel, large mining projects and certain petrochemical projects which require heavy capital and high technical skills.

Experience has shown that private investors are willing to invest in industries for which (a) there is adequate market for the product (b) there is some knowledge about the manufacturing of the product and the skills required (c) the main raw materials are available and (d) the amount of capital required is not great and can be amortized within a short period, say 4 to 7 years.

The reason for expecting quick returns arises from the fact that there is a feeling of uncertainty. Furthermore the rate of interest is so high that the investors would not invest in industrial enterprises if the returns were not as high as those acquired through commercial loans.

The expansion of industries in the private sector would be stimulated by:

1. Extension of credits as outlined in the credit paper.
2. Capital participation by government in projects which require heavy investment.
3. Tax and Tariff exemptions outlined in section XIV.
4. The spread of adequate information about desirable industries with data on size of the market, capital requirements, feasibility of production, skills required, costs and information about manufacturing processes. This should be done by the Ministry of Industries & Mines.

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5. Subsidizing surveys necessary for the establishment of new industries outlined in section X.

6. Subsidizing foreign experts for private industries as explanied in section XI.

The government should only enter into direct industrial investments when, in spite of the above incentives, private sector does not enter them and they are considered essential to the industrial development of Iran. In these cases the government should, prior to undertaking investments, consult private investors and only when it is discovered that no possibilities exist in the private sector should it take action.

Disposal of Government Factories and Mines

In addition to the oil industry, the Government owns more than 100 factories and mining establishments. These range from a number of small, old, inefficient units up to a few large and relatively efficient modern production units. Ownership and administration of these 100 or more units is concentrated in four government agencies, i.e., the Ministry of Industries and Mines, the Ministry of Customs and Monopolies, the Ministry of Finance, and the Plan Organization. The location of particular factories or groups of factories within the government has frequently changed. The term "government factories" hides a rather complex and often shifting network of legal and administrative relationships and includes units which were established for differing reasons and have differing histories. (A list of all government factories and mines, and their parent organizations, appears in the appendix I and II).

What should be done with these enterprises in the future? Should they be sold off to private buyers? If so, all of them or only some of them -- and if the latter, which ones? Or should the government retain all its present enterprises and simply try to improve their operations?

The Second Seven Year Plan Law assumed that the government would make a vigorous attempt to sell off most of the government factories to private owners. The exact policy was not spelled out in the law and the terms of sale were not mentioned; these matters were left to be determined by the government. Initially the government authorized the sale of all government factories. But in 1337 the government removed the 12 sugar factories from this policy by preventing their sale for a period of two years. Later, various other factories were withdrawn from the policy; this was done not so much for reasons of policy as in response to pressures from certain interests within the government that objected to the sale of particular units.

The general policy of the Second Plan to "sell off government plants" has been a failure. Only four or five small units have been sold, and in every case the buyer has been mainly interested in acquiring land, not the factory. The main reasons for the failure of the Second Plan policy are these:

1. The policy itself was too unselective. Experience and further study of the problem suggest that it is a mistake to apply the same policy to all government plants.
2. The terms of sale offered by the government have not been attractive to buyers. There has been an unrealistic attempt to recover the entire cost of the factory and in many cases buyers were not offered reasonable credit terms.

The Third Plan proposes a selective policy of plant disposal in accordance with the following principles (these principles should be part of the Third Plan Law)*:

I. Plants that should not be sold: the following plants should not be sold but should be regarded as government establishments for the indefinite future:

    1. All munitions factories. However, the Ministry of Defense should not engage in any manufacturing activities not directly related to munitions requirements. Its non-munitions requirements should be purchased from private firms.

    2. The Iran Carpet Company. Although not yet an efficient and successful company, this company represents an important element in realizing the government's policy of preserving and expanding carpet-manufacturing.

* A note on tea factories can be found at the end of the chapter.

3. The Government Tobacco Factory. This is a well-run factory that is an important source of government revenue. However, a strong case can be made for ending the monopoly position of this factory. Just as in the case of sugar, the Government should now permit one or more private tobacco factories to be established.

4. The Tehran Milk Pasteurization plant. This plant has pioneered the introduction of pasteurized milk and other dairy products into Iran. Although private dairy plants are now being established in many cities, we believe the government should retain the plant as a standard against which to measure the performance (on quality, prices, and market practices) of the private plants.

5. Two-thirds of the government sugar mills. Although the government sugar mills are not operated efficiently, they have provided an imprtant stimulus to local agricultural development in their regions. For the period of the Third Plan, we believe that no more than one-third of the government mills should be sold to private purchasers. We believe there needs to be competition between the public and private sectors for the next few years, so that the best and worst practices of each sector can be identified and evaluated. We also believe that if more than this number of government mills were to be sold during the Plan period, too much private entrepreneurship would be diverted from creating new plants to the purchase of government plants.

   There would be little point in transferring the Varamin sugar refinery from public to private ownership. During the Third Plan the Haft Tapeh mill and refinery should be retained in government hands for further development of the cane sugar experiment.

6. Shilaat. However, this company should not be given the monopoly position in Persian Gulf fishing that it has enjoyed in the Caspian. In particular, we think the Bandar Abbas cannery should be sold. This plant was tentatively sold to private buyers during the Second Plan, but the decision was reversed at the last minute and the Ministry was ordered to transfer the plant to the Ministry of Finance.

II. Plants that should be sold: in general, all plants for which a good case for continued government ownership cannot be made should be transferred to private ownership. As a practical matter, the government owns several manufacturing and mining establishments (many of them small and old) which no private buyer is likely to purchase, since they cannot be brought into a profitable condition. In such plants the real decision facing the government is not sale but closure. We see no point in using public funds to keep open establishments that cannot be made to cover their costs; the only exception should be cases where closure would bring an obvious, serious, and lasting social problem. The government has wisely closed a few unprofitable establishments in recent years; we think this policy should be continued.

In general, all plants that private personsare willing to buy, the government should sell. Since excellent surveys have been made of all government factories, the task of selling them is largely a matter of setting the right terms and seeing that acceptable offers are not thwarted by unjustified pressures from within and outside the government.

III. Termw of sale: The first attempts to sell government factories were frustrated by pricing the factories too high and by not offering sufficiently generous credit. There must also be flexibility so as to allow different terms under different circumstances. Here are some guiding principles:

1. The selling price must not be governed by an attempt to recover the government's investment. In many if not most cases the government's investment costs have been much higher than they would have been if the factory had been built privately. Government officials must be relieved of the fear that they will be critisized if they do not get back the government's investment.

2. The required down payment should be low and a period of 10-15 years should be allowed to pay off the balance. Interest reates should be slightly lower than those being charged on IMDBI loans, since the government loan should be without charge for administrative costs or profit.

3. Where appropriate, the government should consider selling not all the assets but only the machinery. The buyer would not have to pay for land; he would rent the buildings; he would purchase only the machinery. This would help established more equitable prices, since the high value of land often distorts the total value of assets a purchaser must buy. Under this policy buyers could not use the properties for non-productive purposes.

4. The government should announce its willingness to make severance payments to laborers and staff who are surplus to the company's needs. Buyers must not be expected to become burdened with the problem of surplus government employees. Recent experience with severance in a number of government factories shows that this solution to the surplus labor problem is frequently possible.

5. To protect Ministry officials from unjustified criticism, all sales should be approved by the High Economic Council before they become final.

The above provisions regarding plants that are not to be sold, plants that are to be sold if possible, and the terms of sale should be included in the Third Plan law. The Law should also require the Minister of Industries and Mines to submit a written report to the High Economic Council in Shahrivar, 1343, indicating experience in trying to dispose of government factories during the first two years of the Plan. This report should also contain specific recommendations concerning the future of those plants which the government has unsuccessfully attempted to sell.

* * *

Tea Factories: The government's role in tea is largely confined to purchasing the output of those private factories that wish to sell to government, and to the licensing of imports. Of the 106 tea factories in the country the government owns only eight. These are old and unlikely to be saleable to private owners. However, if private interests should make reasonable offers for particular plants, they should be sold. But in view of the minor role of government tea factories in the tea industry their sale is relatively unimportant.

Section IX.

THE THIRD PLAN PROGRAM FOR MINING

Although some 25 different minerals are produced in Iran, only five or six are of much economic importance. Aside from petroleum the more important products have been, lead, zinc, copper, chromite, coal and manganese. Of these, the most promising for expansion in the Third Plan are lead and zinc (which in many deposits occur together), chromite and iron. However, the extent of deposits of these ores is not known. The prospects for chromite are particularly hopeful in view of the discovery of large deposits of high-grade ore not far from ocean transport in south-eastern Iran. Deposits of copper are not as rich or plentiful as those of lead and zinc; consequently this branch of the industry has not shown any strong development trend. Coal is likely to be displaced from many uses by petroleum and gas. However, the mining of coking coal will have to be greatly expanded to serve the needs of the iron and steel project. When plans for this project are completed they are likely to show a need for more mineral inputs than only iron and coal.

The iron ore deposits of Kerman appear of sufficient quality and volume to help greatly in justifying the building of a railway from Kerman to the new port of Bandar Abbas. Construction of such a railway could not be completed before the end of the Third Plan. Consequently no significant development of these resources for export is likely until the Fourth Plan unless transport studies show that the ore could be exported with present transport facilities. The extent and quality of the coal deposits of the Kerman region require further surveys though the report of German experts show that with the exception of the Hojedk area, other areas lack adequate quantities of coal to justify economic exploration.

With the exception of coal, the important minerals depend almost exclusively on export markets. In recent years, the single most burdensome problem of the industry has been the very high costs of inland transport and loading at the ports. Major objectives of the mining program will be to reduce transport costs, improve port loading facilities, and to minimize the amount of waste material transported as a result of up-grading minerals at the point of production. Other major problems which are holding back the development of mining are:

1. The shortage of mining engineers with practical training
2. The shortage of skilled practical miners
3. The lack of good knowledge about ore reserves at most mines, which discourages both domestic and foreign investment; there is also a lack of the basic geological information necessary to stimulate prospecting.
4. The lack of credit facilities suited to the needs of mine operations.

The government can do more to assist the development of Iranian mining by creating certain conditions, and providing certain services, than it can by any program of direct investment. The proposed development program consists of five parts:

1. The improvement of transport and loading facilities.
2. The provision of improved training and educational opportunities for skilled and semi-skilled mine operators.

3. The provision of technical assistance to the private sector in proving up mine reserves, in pushing forward the Geological Survey and in giving general technical guidance.
4. An expanded and liberalized program of public and private credit.
5. Continuation of prospecting activity

I. Transport and Port loading

There are four parts to this program.

a) Installation of modern ore-loading facilities at Bandar Abbas and Khorramshahr. The cost of transfering ores from truck and rail to ocean vessels is exceedingly high in both these primary exporting ports, but especially so at Bandar Abbas. Compared with other parts of the mining program, it will be relatively easy to launch port loading projects which will speed up loading and reduce the f.o.b. cost of Iranian ores. An allocation of Rls.75.75 mn. ($1 mn.) is made for completing port-loading improvements begun during the Second Plan. (Carried on budget of transportation Sector.)

b) Special "Feeder Road" program for mining: Few mines are located near good roads or railways. Thus an important part of ore transport costs is made up of the initial haul from the minehead to a good road or railhead. To assist mining companies to develop feeder roads and to reduce the burden of normal road-building for mines, it is proposed that a program of "matching grants" be made to mining companies. Under this proposal, the government would pay half the cost of connecting mine-sites with the nearest recognized road. All details of road design and construction would be left in the hands of the mining companies, on the theory that if they have to pay half the cost their protection of their own interest will also protect the government. This program would be a continuation, with modifications, of the general feeder-road program begun during the Second Plan. Cost of such a program would be open-ended. However, it is estimated that something like 1000 Kms. would be built. The average cost per Km will be $2,300, bringing the total cost to $2.3 million. (Carried on budget/ of transportation sector).

c) Extension of railway to Yazd or Kerman: The area centered on Yazd is one of the most important lead-zinc areas in the country. At present these ores, containing a high proportion of waste material are transported to Bandar Pahlavi by truck, and to Khorramshahr first by truck to Qom and then by the railway. Rail transport will be significantly cheaper than truck, a saving of particular importance to this low-value commodity. It is understood that this railway extension is definitely part of the Ministry of Roads program for the Third Plan.

d) Survey of suitable sites for one or two lead-zinc concentrators and a smelter: In order to reduce the harmful effect of high transport costs, it is important to avoid paying freight on waste material. The purity of ores can be increased mechanically in concentrators that sort out wastes, and chemically in smelters that separate metal from waste by heat processes. Smelters are much costlier than concentrators and require higher technical skills. During the period before the Plan starts, a technical survey should be started to determine the feasibility of concentration plants and a smelter for lead and zinc. This survey should probably include subsurface exploration by drilling; this goes beyond the present work of the ministry's expert under the French agreement for technical assistance. Studies should be continued to secure an appraisal of the suitability of the new smelting process used at Avonmouth, U.K. This process permits mixed lead-zinc ore to be charged into a common smelter and yields separated pure metals.

If suitable projects can be defined as a result of these surveys, they should probably be left to the private sector.

II. Improved Training and Educational Programs

The lack of mining engineers with practical experience and of skilled practical miners are two of the most serious problems of the industry. The Ministry of Industry and Mines is working out with Point IV a project for opening one or two schools for practical miners under the direction of skilled foreign workers. These training-mine would be centers to which other mines would send men for training in practical mining techniques; costs will be shared by USOM, the Iranian Government and participating mines.

This is an excellent beginning of a scheme that could easily be extended. It is possible that two or three additional such schools could be established during the Plan. Other foreign governments may be requested to assume responsibility for furnishing the personnel and foreign exchange costs of such schools as technical assistance projects.

With respect to mining engineers and geologists, a major objective of the Third Plan must be to inject a larger element of practical experience into their education so that they have a better understanding of practical field problems and are more willing to accept mine jobs. We propose that a program of on-the-job training for engineers, skilled and semi-skilled workers should be established by the Ministry of Industries to promote skills in the mining industry. For this purpose use will be made of the two demonstration mines now under consideration (Naghlab and Shemshak).

III. Providing Basic Information for Mining Investors

1. Encouragement of drilling to prove up reserves:

Because of the relatively primitive techniques used in Iranian mines, few if any of the country's mines have been worked below the level of the water table. Since deep drilling is not practiced, there is no knowledge of ore reserves lying below the water table. In the absence of knowledge about reserves, domestic and foreign investors are limited in their outlook and planning.

The Ministry of Industries and Mines has prepared a project for technical assistance to private companies. The project includes drilling, surveying, ore analysis and making available on a subsidized basis the services of geologists, mining engineers and other experts. The project anticipates the extension of subsidies to private investors for the above services.

2. Surface maps: A frequent source of complaint by mine-owners is that the country's surface maps are not sufficiently accurate to permit careful delineation of exploration and other claims. This leads to frequent confusion and occasional conflicts of interest. A major service to mining development would be provided if the National Cartographic Center could produce accurate maps for the more important mining regions as a high-priority task. It would be a responsibility of the Ministry to contract with the NCC to perform this task.

3. Geological Survey: A "Geological Survey Institute" is an organization that makes and publishes maps of the country's geological features. These maps are in sufficient detail only to show where intensive prospecting is likely to be useful and do not by themselves identify commercial mining opportunities.

During the Second Plan legislation was passed providing for the creation of an Iranian Geological Survey Institute. However, this did not take place owing to shortage of funds. But now the United Nations has agreed to grant $1,490,000 for the establishment and operations of the Institute which envisages a total expenditure of $3,680,000 within five years. The Third Plan must thus provide $2,190,000 to the Ministry of Industries and Mines to allow this work to be taken up energetically.

IV. Expansion of Credit Facilities

Mining projects often take longer to reach production than do manufacturing projects; they often involve higher risks, and normally cannot offer the types of collateral used for industrial credit. Government and private credit institutions must therefore adapt their practices to the needs of mining.

Under the Revaluation Fund, mining loans for fixed assets were made at an interest rate 2% lower than industrial loans. The Third Plan will also make long-term capital available to the mining sector at interest rates below those customary for any industrial loans. In practice this means the rate shall be the same as it is in agriculture.

The policy of using a lower interest rate for mining than is used for industry will mean that applicants for mining credits will not seek loans from the IMDBI but from the agency designated to handle mining loans. The IMDBI's participation in the mining sector will therefore be limited to making equity investments; this will limit the Bank's role in mining to a small number of the more desirable projects.

With regard to working capital, it is suggested that mine supplies and equipment, ore already mined, mine buildings, and vehicles as well as sales contracts be accepted as recognised collateral. Arrangements should be made with Bank Melli and a few other banks to extend credits for operating capital, against such collateral, from new funds made available to them for this purpose.

V. Prospecting Activity

The Ministry of Industry and Mines is at present engaged on a number of surveys concerning the exploration of certain deposits. None of these surveys has reached a stage where economic studies on the feasibility of exploitation could be started; many of them will not reach such a stage before the beginning of the Third Plan.

The present survey activity of the Ministry of Industry & Mines is concentrated on the following major possibilities:

1. Kerman Iron

Under a technical assistance agreement between Germany and Iran a number of German mining experts have conducted surveys in the Kerman area since Aban 1338 (November, 1959), and have just recently submitted a major report. The findings are highly encouraging: there are large deposits of ore with very rich iron content (28 million tons proven or visible with Fe content between 55 and 63%).

Studies on the economic feasibility of exploiting the ore have just started while further technical surveys are going on. It is expected that these studies will be completed late in 1340. No definite projects can be prepared until the results of these studies are known. So far there have been offers from three foreign countries for the purchase of Kerman iron ore.

2. Kerman Coal

German and Iranian engineers surveying the Kerman iron deposits have also conducted preliminary surveys on part of the Kerman coal deposits in Badamuyen, Hojedk, Kuhbanan, Behabad and

and Darremugir on the East of Bafgh. Based on the incomplete work done so far, the results have not been promising. The coal deposits are scattered and the quality is poor. Exploitation in most cases would be expensive and uneconomical, particularly for exports. In the Hojedk area, however, exploitation could be expanded for local use of coal. Further surveys might clarify a more accurate picture as to the economic feasibility of exploitation.

3. Potash of Rezaieh Lake

In 1338 a number of Israeli experts were invited to conduct surveys on the chemical deposits in Rezaieh Lake which showed some similarity with the Dead Sea. The results of these surveys, which are taking place in cooperation with the Ministry experts, will be obtained late in 1341. The main use for potash would be in fertilizer production.

4. Sulphur in Fars

Israeli experts also visited sulphur mines in Delazian (Semnan), Bostaneh and Doshmanziari in the Fars provinces. Samples of sulphur deposits were sent to Israel for laboratory tests. The results will be ready in the next several weeks. If the sulphur content is of reasonable quality, surveys will be conducted to determine the extent of deposits. Final results could be expected in Khordad 1340 (June 1961).

Sulphur from these mines could be used in the fertilizer industry, in oil refining, and in making sulphuric acid for general use in industry.

5. Lead & Zinc

Considerable survey work has been done on these ores in recent years. The Ministry itself, a Point IV expert, and a French expert have all been active. As a result of their work a new program of drilling has been worked out to prove up reserves at various locations. Once reserves are known it may be possible to justify the construction of a lead and zinc smelter.

6. Radioactive Materials

Under the Franco-Iranian Technical Assistance Agreement one French atomic expert came to Iran in early 1339 to work for one year. Two additional experts have been supplied under an agreement with the International Atomic Energy Authority. Exploration for radioactive materials is being conducted by these experts with the help of teams from the Ministry. Under the present schedule, exploratory activities will continue until mid-1342. A few occurences of radioactive minerals and many anomalies have been reported. The search for radioactive minerals may also lead to important finds of other and more useful minerals.

7. Other Mines

Asbestos & Borax. Under a contract with the Ministry started early in 1339, a foreign firm has been surveying borax deposits in Behshotoran, Sirjan, Sabzevar and Abshir in Azarbayejan as well as asbestos deposits in Mashad, Kerman and Anarak. Preliminary studies show favorable results in both cases. Further studies on the extent and quality of deposits are expected to be completed early in 1340.

There are also a number of other surveys being conducted by the Ministry for other minerals such as alum, phosphate rock, kaolin, feldspar and quartz. The results of these surveys will be ready over the next several months.

As noted above, the results of the current surveys on various deposits will not be known for some time to come. However, the mining allocation should make room for the possibility that some of these government surveys will result in projects that can be executed during the Plan. At this time, an allowance of Rls. 1,802.85 bn. ($ 23.80 mn.) seems adequate. This figure is based on the arbitrary assumption that final studies will justify proceeding with less than one quarter (by value) of the projects under study. Rough estimates of the cost of each possible project are given below:

1. Kerman Iron Mine	Rls.1,000 mil.
Investment required for machinery equipment & installations enabling an annual exploitation of 500,000 tons of iron ore.	($ 13.3 mil.)
2. Sulphur in Shiraz	Rls. 4,550 mil.
Investment required for machinery & equipment for exploitation together with machinery & installations necessary for smelting & purifying 200,000 tons of sulphur a year.	($ 60.0 mil.)

3. Potash from Rezaieh Lake	Rls.628 million
Machinery, equipment and installations necessary for exploiting 75,000 tons of potash a year.	($8.3 million)
4. Radioactive materials	Rls. 20 million
Machinery and establishment required for exploitation.	($266,000)
5. Zinc and Lead Smelter	Rls.345 million
Investment required for establishing one smelter for producing 30,000 tons of lead and zinc a year.	($4.6 million)
6. Borax, asbestos, kaolin, phosphate	Rls.60 million
Investment required for the exploitation of the above minerals would not be large; a total sum of Rls.60 million is estimated to be sufficient.	($800,000)
Total.........	Rls.6603 million (=$88 million)

The preceding surveys have been conducted by the government, either directly or by contract. In the long run, however, prospecting by private indivnduals and companies will be more important in turning up practical mining possibilities than anything the government can do. In the future as in the past, the government's own prospecting activity will be confined to a few major projects of national importance and of such size that private entrepreneurs would not undertake them. The government's primary responsibility in the prospecting field will be to improve the basic data and government services needed to support private prospecting.

A high priority for government prospecting and development activity is to take up the six specific projects in the Kerman region recommended to the government in 1337. These six projects are described in detail in appendix no. 3.

Financial Break-down of the Mining Program

Table 1 below shows the major categories of expenditure of the Rls. 3,976.90 mn. ($ 52.50 mn.) allocated for mining activity. Since very few definite projects exist for mining at the present time, both the total and its distribution among the various categories must be regarded as highly tentative.

Table 11. Financial Allocations for Mining

Activity	Estimated cost Rls.mn.	 $ mn.
1. Govt. program of technical assistance to private mines	197.73	2.61
2. Govt. -sponsored training activities	30	.40
3. Govt. prospecting and development of new govt. mines	1,802.85	23.80
4. Net investment in existing govt. mines.	75.75	1.00
5. Geological Survey	165.89	2.19
6. Private mining	1,325.63	17.5
7. Machinery replacement	378.75	5.00
TOTAL:	3,976.90	52.50

Section X.

Subsidizing Foreign Surveys of Private Investment Opportunities

Many of the country's industrial and mining investment possibilities require detailed studies by foreign companies or research agencies. This is true of situations being investigated on behalf of Iranian investors alone as well as situations involving possible foreign investment. These surveys are often essential to the framing of sound investment proposals and to the stimulation of interest in Iran among foreign investors. The proposal made here is that the Government of Iran should encourage the maximum number of such surveys by offering to bear half their cost. In addition to the substantial assistance provided, the device might have a significant effect in stimulating foreign interest in investment possibilities in Iran.

Any such scheme would have to be simple to administer, offer minimum opportunities for abuse, and be reasonable in cost. A few simple, easily-understood safeguards should achieve these ends. Here are some proposed regulations:

1. The survey proposal must be approved in advance by Plan Organization on behalf of the government. The approving committee shall include representatives of the Ministry of Industries and Mines and the IMDBI.
2. A written description of the survey proposal and terms of reference would be filed in advance, with cost estimate.
3. Payments would be made only on a reimbursement basis, not in advance. This would retain a useful element of uncertainty hanging over the principals to make sure they met other conditions.
4. Ten copies of the finished survey report must be submitted to the government.

5. The principals would have a "first refusal" on their project for 12 months following its submission to government; thereafter the report would become public property and be open to other parties to read and use.

The annual cost of operating such a subsidy scheme cannot be estimated accurately in advance. An initial allocation of Rls.112 mn. ($1.5) million would be sufficient.

In order to generate the necessary studies of the Third Plan projects the scheme should be started well in advance of the Third Plan. Financing might be difficult, but might be handled either by postponing payments until after September, 1962, or by appealing to a foreign government interested in private enterprise in Iran to make a grant for this purpose (e.g., Germany, the U.S., or other European governments, singly or through a pooled fund).

SECTION XI

Assisting Private Companies to Employ Foreign Technicians

The employment of foreign technicians by private Iranian firms is one of the most effective means of training Iranian technicians and managers and of assuring a factory's continuous operation. However, many companies, particularly the newer and smaller ones, cannot afford to have such technicians. In 1337, for example, there were only 346 foreigners reportedly working for Iranian employers as "executives and foremen". During the Third Plan the Government will increase the number of foreign technicians at work in Iranian factories and mines by sharing the cost of their employment.

The Plan provides that any Iranian private firm employing an approved foreign technician will be entitled to receive one-half the man's annual pay up to a maximum of 50,000 tomans, plus one-half the cost of the technicians round-trip transportation to Iran from his point of departure. This subsidy will be available for a period of one year from the time when a company first applies for the assistance. A company will be eligible for 3 man-years of foreign technicians' assistance; this amount may be used in any combination of actual man-years provided it is entirely used up during the Plan period - e.g., a company could not employ one expert for 3 years.

Administration: The scheme would be administered by the Ministry of Industries and Mines, using its regional offices. A simple form, approved by an Advisory Committee of private employers, would be required. Payment could be made monthly, quarterly, or annually on a reimbursement basis, supported by a receipt signed/ by the foreign technician and the employer.

Cost of Program: If we assume that the number of foreign technicians working in the country should rise from about 300 to 1,000 and that their annual salary would be 70,000 tomans, the total annual salary bill would be 70 million tomans. The government would bear half this cost, or Rls. 350 million ($4.55 million). Travel cost would not exceed about Rls. 8 million annually, of which the government's share would be Rls. 4 million ($52,000). Actually these costs seem somewhat high; the annual charge is likely to be under Rls. 150 million ($2 million) the first year and reach $4 million by 1346. For the Plan, an allocation of Rls. 1 billion ($13 million) seems adequate.

Since private employers would be paying half of all costs, the program would be largely self-disciplining.

Ineligible firms: Foreign firms working in Iran, Iranian firms with foreign private equity capital, firms not engaged directly in manufacturing or mining (as certified by the holding of a license from the Ministry of Industries and Mines), and all government companies (including the NIOC) shall not be eligible for assistance under this program.

Section XII.

Increasing the Productivity of Investment

Although some Iranian factories are efficient, the great majority are not. They waste capital, labor, and materials. They do not have an accurate picture of their financial condition. They do not foresee their future cash requirements. If increasing attention is paid to production efficiency and accounting the basis will be laid for reducing costs, increasing wages, and rising profits.

The key to higher productivity is an enlightened attitude among business owners. Until a desire for efficiency exists among industrialists, very little can be done to bring down the present high costs of production and to bring more order into company finances. Fortunately there is a small and growing group of progressive industrialists who want to adopt modern methods of business management. The government's program of assistance to management must concentrate on this small group of enlightened businessmen in the hope that the example of good management practices will spread to others.

The most practical short-run step government can take is to establish a National Productivity Center. This should be done with the close help of the United Nations, which has experience in establishing several similar centers in other countries. It should be independent of any government ministry. The main tasks of such a Center in its industrial activities would be to suggest to industrialists how they can improve the operation of their plants and, particularly, to organize on-the-job training programs for all levels of managerial personnel. The Center should probably have two small groups of experts, two or three in Esfahan, and four to six in Tehran, (some of the time of Tehran experts would be spent on provincial assignments). The government should introduce the Center to leading industrialists at a Conference at a prominent place.

From a long-run point of view, the government can assist the development of modern management by supporting the growth of educational programs in the field of business management. These programs are in their infancy in Iran and no rapid expansion can be expected until adequately trained teachers and teaching materials are available. At present there are new, experimental programs at the University of Tehran, the Abadan Institute of Technology, and the National University. Of especial importance is training in accounting; special short-term evening courses must be supported to train accountants for industry, banking, and government service.

The approach to increased productivity through management training cannot move rapidly or on a broad front until there is much more widespread interest than is now evident. For this reason the strongest influences for improved management may well come from the standards laid down for borrowers by financial institutions and from the pressures generated by market competition.

An allocation of Rls.75 million ($ 1 mn.) is made to cover the rial costs of supporting a National Productivity Center for the Plan period.

Section XIII.

A Program for Small Industry

Large-scale industry is a more dramatic and more visible part of the industrial sector than small-scale industry. Also, it usually receives more attention from government planners and private institutions. Nevertheless, in most developing countries small-scale industry produces more than half the country's industrial output and employs many more people than large-scale industry. Any government desiring a balanced program of assistance to industry must therefore take steps to help small industry. If special institutions and programs are not established, the development of this important sector will lag behind. Because there are so many of them, small industries are particularly important for increasing industrial employment.

The Problem of Definition: Any definition of what is meant by "small industry" must be somewhat arbitrary. But a definition is needed to define which firms are eligible for the benefits of the assistance program. It is helpful to distinguish between "small industry", as we shall use the term, and "cottage industry".

> Cottage industry: this includes manufacturing activities that are carried on within the home, often on a part-time basis and using family members as the labor force. Production is often for self-consumption or for local barter (not for cash sale in markets beyond the local community). The laborers are often not paid any cash wages. Production techniques do not involve power-driven equipment. However in the case of carpet and handloom industries, the two most important cottage industries in Iran, production is mainly for cash sales and in some cases go beyond using family members as labor force.
>
> Small industry: This is distinguished from "cottage industry" by the fact that it is conducted outside the home in small workshops of factories. Employment is usually full-time and the labor is usually paid a cash wage. Production is usually for sale. Small industries may be rural or urban.

Rural small industries often depend on locally-produced raw materials (usually agricultural).

No general program of assistance to cottage industries is being attempted in the Plan (however, a special assistance program for carpet-weaving is part of the Plan, see P. 123). The main problem of definition, therefore, is to mark off "small" industry from "large". This can best be done in two different ways, depending upon the purpose for which a definition is needed:

1. For credit purposes, we define a "small industry" as any firm seeking a single loan of Rls. 4 million or less, while its total fixed assets does not exceed Rls. 10 million. All firms seeking loans of more than Rls. 4 mn. will apply to the Industrial and Mining Development Bank of Iran, which is the development bank serving "large industry".
2. For employment purposes, we define "small industry" as any firm having fewer than 100 employees (regular plus seasonal). The main use of this criterion will be to establish eligibility for membership in an Industrial Estate.

These definitions need not go together. For example, it is perfectly possible that a firm with 60 employees might qualify for membership in an Industrial Estate but would seek a loan for more than Rls. 4 mn. from the IMDBI. In the one case it would classed as a "small industry", in the other as a "large industry".

Preconditions for a successful program of assistance: The development and execution of any program of assistance requires (1) understanding and support among top policy-making officials, (2) the existence of qualified, trained staff at the administrative and technical levels, and (3) adequate agencies and institutions for administering the program. At the present time Iran is in the early stages for meeting these preconditions. The objectives of the small-industry program must therefore be modest ones. An ambitious program would be doomed to failure from the start and would discourage action in this field for several years. Fortunately it is possible to define a modest program that can still be extremely useful.

A four-point program: credit, Industrial Estates, a small-industry survey, and trade promotion to assist carpet exports. The proposed program includes three forms of assistance plus a survey that will provide information for program extensions in the future. The credit program is designed to make more credit available and to make it available at a cost roughly half that at which small industries can get credit outside the banking system. The three Industrial Estates being proposed are desinged to make it easier for small industries to establish themselves, both by reducing the capital requirements and by eliminating many customary inconveniences. The small-industry survey will be the first organized research on the problems of small industry ever undertaken in the country; its objective will be to identify the main problems confronting small industries and thus suggest the content of future assistance programs.

1. The Credit Program

The main source of additional output and employment in small industry is new investment. The best means of increasing investment is to make finance available at reasonable terms through convenient channels. Small Industry has two primary credit needs: (1) credit for purchasing new machinery and tools, and (2) credit for purchasing raw materials, supplies, and for carrying inventories until products are sold and paid for. Credit for land and construction is not believed important for most small firms, although loans for these purposes will be possible under the program.

The small-industry credit program is intended to be a comprehensive one in the sense that it will meet all the credit needs of small industry from a single source. This single administrative source will develop the detailed policies and programs and will disburse the funds allocated to this program. However, much of the program (particularly that for working capital) can be administered on a decentralized basis, through the regular commercial banking system. The kind of administrative agency required to perform these functions effectively differs slightly from anything now existing in Iran. What is needed is an agency similar to the Small Industry Finance and Development Corporations that have been used successfully in many other countries. Iran already has one credit institution with some experience in small-industry finance (the Industrial Credit Bank of Plan Organization) and it may be wise to enlarge its scope so that it becomes an independent Development Corporation to serve small industry. Whether or not this is done, the small-industry credit program will be administered by what is now the Industrial Credit Bank (ICB).

So far as loans for machinery and equipment are concerned, a hire-purchase system is by far the best. The down payment required of the borrower can be modest; no money is given directly to the borrower, since the supplier is paid in full directly by the bank; the borrower repays the bank in installments over a period of a few years. In case of default, the machinery serves as collateral for the loan, with the borrower losing his down payment and the lending bank recovering its loan through sale of the machine in the second-hand market.

In all loans for fixed assets it is important that some kind of technical evaluation be made of the loan application. Before any loan is made, it will probably be necessary to have an interview with the applicant and an inspection of his premises. This technical appraisal of loan applications requires an engineering staff which the ICB does not now have and which would be almost impossible to recruit in Iran at the present time. It is very likely that a *small* number of foreign engineers will have to be recruited to work with whatever Iranian staff can be mobilised. Such engineers could handle applications from the provinces by a system of regular provincial visits.

It is too early to spell out the credit program for small industry in detail. However the Third Plan will contain all essential details. (Appendix A shows the credit program for small industry used in Pakistan).

2. Industrial Estates

An Industrial Estate is a large area frequently located on the edge of a city or town, where essential facilities are provided in order to make private investment less costly and more convenient. An Estate may be organized by the government, the municipality, or a private corporation. The investment in necessary overhead facilities such as roads, water supply, waste disposal, and electricity is borne by the Estate. Private manufacturers may rent buildings constructed by the Estate (without payment of any "key money") or they may design and build their own buildings with credit provided by the Estate. Persons or companies eligible for space can range from very small to fairly large companies. There may even be space for individual artisans or handicraftsmen. But whatever their size, the estate means substantial savings in capital and the reduction of inconvenience and delays.

From the government's point of view, an Industrial Estate is a major means of attracting investment to areas where it is needed. The development of estates outside Tehran, for example, can be a major tool in the government's policy to reduce the over-concentration of industry in the capital. Estates may also provide a nucleus around which to provide low-cost housing for employees and staff as well as certain essential social services such as schools, medical clinics, and recreation facilities.

To sum up the main advantages, an Industrial Estate means:

1. For the government, a new means of attracting industry to locations where it is wanted and of discouraging overcentralization in Tehran.

2. For the Private entrepreneur, much lower investment requirements because he need not buy land, construct buildings, pay "key money", or provide his own power, water, roads, and other service facilities.

Location

Estates should not be located in areas that are already heavily industrialized; this means they should not be in Tehran. On the other hand, they cannot be located at isolated sites. They must be near good road and rail transport and within easy access of a good labor supply. A good water supply must be available and climatic conditions must not be so bad as to make living conditions unacceptable. They must be near ~~enough~~ to a city or town to provide reasonable recreation and housing opportunities for workers and staff.

There are two general regions where additional employment opportunities are especially needed, i.e. Khuzestan and the Caspian. Both regions have several towns accessible to good transportation, both have surplus labor, and both regions have already made some progress toward industrialization. There is a possibility that one private Industrial Estate will be established in Khorramshahr. The Plan proposes that the Government establish two additional Estates, one in Khuzestan, the other on the Caspian. In Khuzestan, a site at Ahwaz or possibly Andimeshk or Dezful would seem most suitable. In the north, the most promising sites would Rasht, Babol, Shahi, Sari, Behshahr or Gorgan. Other possibilities are Tabriz, Mashad, Kerman, Shiraz, and Yazd. A major consideration in selecting sites should be the degree of interest shown by local officials and industrailists.

Administration

Government-operated Industrial Estates can be administered with a small and simple administrative organization. Once the program is under way, its administration need not require more than part-time attention from a one-man head office in Tehran, plus a one-man office at each Estate. The head office would select sites, work with engineering consultants to plan the development of the sites, arrange the design and construction of initial facilities, select the tenants, negotiate the terms of occupancy with tenants, and administer the finances of the Estate. The site-office would be primarily a maintenance office; it would need one head who would recruit and supervise a small staff of maintenance personnel who would be necessary to service the installations of the Estate and its tenants.

Costs

An Estate will involve both capital outlays and operating expenses. Although certain items of capital costs (e.g., land, initial design costs, and roads) may be borne entirely by government, a large portion should be recovered from tenants through rents and fees charged for electricity, water, and other services. Operating costs should also be carried by reasonable charges for all services provided by the Estate. However, until an Estate has several tenants its expenses will exceed its revenues and a subsidy will be required. The government will be satisfied if the Estates have reached the break-even point by the end of the plan.

Illustrative List of Services that Can Be Provided by an Industrial Estate

Note: This list is not intended to be complete nor is it meant to suggest that all these services are provided at every Estate. Normally an Estate would begin with a few essential services and then expand its activities according to the needs and desires of its tenants.

Minimum essential services

1. An adequate network of roads within the Estate and connecting the Estate to nearby highways.
2. A reliable supply of fresh water piped to each factory.
3. A reliable supply of electric power at reasonable costs.
4. Suitable means of disposal of waste and refuse, including waste water and other liquids, fumes, and smoke.
5. A suitable system of sewage disposal from each factory.
6. A Post and Telegraph office and immediate telephone coonections at nominal cost.
7. Adequate lighting of all roads.
8. A centralized staff of skilled maintenance workers capable of installing and repairing essential service facilities (electricity, plumbing, telephones, windows, painting, minor carpentry, etc.)
9. Rental of factory space built by the Estate or provision of credit for owners wishing to construct their own buildings.

Additional Possible services (depending on needs at a particular location)

1. Housing for various grades of employees.
2. Essential medical care for employees and their families.
3. Recreation facilities, such as a playing field, a cinema, restaurant or cafe, a workers' canteen for noon meals.
4. Adequate supplies of steam for heating or for use in industrial processes.
5. Essential community services, such as shops, a bank, a bath.
6. Central storage wherehouses for safe, cheap storage of raw materials, supplies, and finished products.
7. Truck transport for goods and bus transport for workers and their families.

3. Survey of Small-Industry Problems

A major difficulty in launching an effective and sizeable program of assistance for small industry is that relatively little information is available about this sector. We do not know which small industries are most important, where they are located, how many persons they employ, where they source their capital, how they sell their products, which ones are expanding, which ones are dying out. Iran is far behind many other countries in its knowledge about its own small industry. Therefore, in order to prepare for an expanded program of assistance in the future, an intensive sample survey of such industries will be conducted during the first half of the Plan period. The survey will be conducted by a combined Iranian-foreign team of experts recruited jointly by Plan Organization and the Ministry of Industries and Mines. The conduct and purpose of the survey will be similar to small-industry surveys conducted in India, Pakistan, Indonesia and other countries of the Middle East and Asia.

The survey will probably be conducted by three teams of four men each (two Iranians, two foreigners). Each team will survey approximately three cities and surrounding villages, spending about two months in each city or town. This would permit the survey to include about nine centers. Field work would take about 6 to 8 months; this should be preceeded by about one month of preparation in Tehran and it must be followed by about three months of analysis, report-writing, and translation. Estimated total cost is about Rls. 15 million ($200,000).

4. Trade Promotion for Persian Carpets

The largest small industry in Iran is carpet-weaving, this industry employs on the order of 125,000 persons, widely distributed over the entire country. Carpet-weaving is also the thrid largest export industry of the country, after oil, dried fruits and cotton. Although this ancient handicraft industry may some day die out as weavers find more attractive jobs in other fields, there is every reason to believe that carpet-weaving will be very important in Iran for the next few decades, at least. Anything which can be done to protect and promote this industry will reduce the social and economic problems involved in the large-run mevement of people out of rural occupations into the expanding urban and industrial trades.

The main forms of assistance planned for the carpet industry during the Plan are (1) an expansion of the activity of the Iran Carpet Company (see pp. 38-39) and (2) a government grant for the launching of a major program of sales promotion in exports markets, particularly in North America and Europe. In 1340 Plan Organization proposed two special surveys necessary to plan an effective program of trade promotion. One survey is concerned with the market for Iranian carpets in the United States; the other is concerned with production and marketing problems in Iran, so as to see if Iran could expand the supply of those types of carpets likely to appeal to foreign tastes. A sum of Rls. 240 mn. ($3.2 mn.) is being reserved for the trade promotion program. The results of the surveys will determine the nature of the program and the adequacy of the funds allocated for it.

Section XIV.

TAX POLICIES FOR ENCOURAGING INDUSTRIAL INVESTMENT

The question of using tax devices as a tool for economic development is of major importance. However, here we are mainly dealing with tax manipulation in order to encourage investment in industries which are considered essential during the period of the Third Plan.

Taxation can be used as an instrument for increasing the total savings in the economy, expediting capital formation and encouraging desirable investments directed toward the goals set by the Third Plan. Since the rate of growth is closely tied with the rate of investment it would therefore be of vital importance to use all possible means to induce investment.

The structure of taxes and their collection could do a lot both to increase forced savings and channel investment toward the desired industries.

In order to stimulate investment in industries it should be seen what measures can be taken in the following:

1. Income tax
2. Tariff on capital goods, raw materials used for local industry, and those finished goods imported which are of a similar nature to the ones made locally.

Income Tax

Taxes on income should be devised in such a manner that they may frustrate speculation and channel savings toward industrial investment.

The new taxes on real estate have frustrated land speculation to a certain extent and have channelled part of savings to industrial investment. However, this tax law requires further revisions to make sure that proper differentiations are made between Tehran (and other main cities where speculation is common) and smaller cities and towns where such taxes would even hamper construction and housing activities.

There is another type of speculation made by money lenders. This class of people pay negligible taxes and thus prefer to lend money instead of investing it in industrial enterprises. Heavy taxes on this group of people too would force them to find other alternatives for investing their money.

On the other hand in order to direct investors toward industrial investments a favorable situation should be created for industrial enterpreneurs. The present 5-year exemption from taxes for newly established industries has been a good stimulus. However, during the period of the Third Plan a more refined system should be established.

Having set certain production goals for various industries, tax holidays should be granted for different periods depending on the relative desirability of the industry and its location.

During recent years a large number of industries have been established in Tehran. About 44% of the loans extended through the revaluation fund has been absorbed in the Capital nd very little of this fund has penetrated to far-off cities.

If industries have to develop throughout the country, and not merely in a few big cities, tax holidays of lesser duration should be given to investors in main cities while the city of Tehran should have no tax holidays at all. In brief, tax policies should be such that they encourage the spread of industries in smaller cities and towns as well as rural areas.

In order to devise policies that would fit the goals of the industrial plan and would direct industrial investment to smaller cities and towns it is proposed that a committee be set up of the representatives of the Ministries of Finance and Industry, Plan Organization and IMDBI.

Two other measures are required to stimulate investment. One is to have a more liberal depreciation allowance and exempt such allowances from taxes if they are reinvested. Another is to exempt corporation profits from taxes as long as they are not distributed as dividends and are used for reinvestment. If such profits are not distributed corporations will have more funds at their disposal for working capital and expansion purposes.

In the final draft a scheme will be worked out for revised depreciation allowances.

Tariff and Commercial benefits

The manipulation of tariffs and Commercial benefits can also play a major role in stimulating industries. For this purpose taxes on 3 categories of imports should be considered:

1. Capital goods not made in the country.
2. Raw materials needed for the country.
3. Imports that compete with domestic products.

Capital goods.

With regard to capital goods essential for the realization of the Third Plan, tariffs and commercial benefits should be reduced to the lowest possible level. However, this does not mean that any kind of machinery should have complete exemptions. The Ministry of Customs has been giving total exemption to a large number of capital goods, for the last few years. This should be refined in such a manner that only those industries considered desireable according to the Plan may have exemptions from tariffs and commercial benefits. This would at the same time control the pattern of investment.

Raw Materials.

The most important issue which has not been given adequate attention so far is the manipulation of tariffs and commercial benefits of imported raw materials needed for industry. The Consortium is the biggest single buyer of thousands of items some of which can be produced locally. However, since it is exempt from customs duties on imports directly concerned with oil operations and since local products are not competitive in price with the imported goods, they buy the latter. One of the main reasons for the higher price of local goods is the fact that imported raw materials often have high tariffs and commercial benefits.

The removal of tariffs and commercial benefits on such items would enable the local manufacturers, in many cases, to produce goods at competitive prices and acquire a large market for the sale of goods to the Consortium and others.

Even in the categories of goods for which the Consortium has no tariff exemptions the problem of selling local products to them exist since local manufacturers have to pay tariff for raw materials.

The Consortium and NIOC, among others, purchase large quantities of metal file cabinets, desks, and other metallic furniture. Local manufacturers have been able to make these items as good as foreign brands. But the price is higher partly because iron sheet imported in various forms has to pay high customs duties and Commercial benefit.

The textile manufacturers use a lot of artificial fibers and caustic soda both of which have high tariffs. Chemicals, pharmaceuticals and paints made locally are faced with the same problem of paying heavy duties and commercial benefits on raw materials imported.

In order to capture the NIOC and the Consortium purchases of those items exempt from tariffs the following measures may be considered:

1. The tariffs and commercial benefits on raw materials of such products which could be produced locally should be cancelled in some cases and reduced in other cases. Since by act of law the Oil Operating Companies are exempt from tariffs on certain goods the tariffs on raw materials used for the production of those items may be completely cancelled so as to reduce production costs. This will enable private enterprise to enter into a large variety of industries whose products are used by the oil operating companies.

2. A complementary step will be to advise strongly the oil companies and government agencies to purchase local products as far as possible and as long as price differentials are within certain ranges. The Consortium has already made it a policy to purchase local goods as long as they are not more than 10% higher in price than imported goods of the same quality and nature.

Tariffs on Finished goods. Many of Iran's industries are still in a stage of infancy. While every effort should be made to improve them, they need protection for a certain period. Part of this protection should come from setting tariffs on imported goods which are similar to the ones manufactured locally. However, this protection should have varying degrees for various industries at different stages of development and should not be too high to spoil the manufacturers.

A formula could be devised along the following lines concerning tariffs or commercial benefits on imported finished goods and raw materials needed for local manufacturing of similar goods.

If the local production cost is high and cannot be competetive with foreign goods imported there are two alternatives:

1. To add tariffs to similar goods imported. Ideally this amount should be equal to the difference between the CIF price of the imported goods and the cost plus reasonable profit of similar goods made locally. For

this purpose some cost accounting work should be done by the Ministry of Industries, on the main locally manufactured goods to arrive at reasonable unit cost estimates as a basis for setting tariffs. However, since the development of proper cost accounting on various industrial goods takes time, the government must continue to rely on the present system of hearings in which the representatives of importers and manufacturers are both given a chance to represent their interests.

2. Another way of protection could be to reduce or cut tariffs on raw materials imported for local manufacturing. For the sale of certain products to oil companies and government agencies exempt from payment of tariffs the latter seems to be more favorable, since tariffs on imported goods would not affect them and they are able to buy goods from abroad without payment of duties and commercial benefits.

The actual yardstick for the manipulation of tariffs on capital equipment, raw materials needed for local industries as well as tax exemptions should be to aim at creating a situation in which local goods are produced at a competitive price with similar goods imported. In cases where this cannot be achieved, tariffs on imported goods of a similar nature should be used as a last resort.

To recapitulate, tax and tariff policies should be revised with due consideration to the above points so as to stimulate private investment and to channel the resources of the private sector into industries that are considered desireable during the period of the Third Plan.

A mechanism should be set for revising tariff policies with the purpose of stimulating private investment. It is therefore recommended that a tariff commission be established composed of experts from the public sector. Representatives should be appointed from the Ministries of Finance, Industry, Commerce and Customs and the Plan Organization and Central Bank with an independent staff. There should be hearings from the representatives each of manufacturers, importers and exporters introduced by the Chamber of Commerce.

The government has made a clear statement of policy that home industries will receive reasonable protection,

The manufacturers however, should be made to realize that government protection will continue only for a certain period. They should also feel that there is competition from outside and if they reduce the quality of their products or increase their prices in a drive for unreasonable profits they will lose the market.

It may be argued that if tax and tariff exemptions are granted for the stimulation of private investment the Government will lose a good part of its revenue. It should be said that the revenues from this source may be reduced but the total size of tax revenues will be increased. When economic activity is expedited income and employment and eventually profits increase and the Government can acquire more direct income tax. Moreover in order to channel the resources of the private sector into useful investments and at the same time compensate for the reduction of revenues from the industrial sector, taxes on large land holdings, real estate, and money lending operations may be increased. The pace and degree of this increase should be carefully worked out in conjunction with the tax reductions of the industrial sector so as to hit the right balance between industrial investment on the one hand and housing, real estate, and construction work on the other.

Section XV.

Encouraging Foreign Investment

The scarcity of capital and skills in Iran necessitates measures that would encourage foreign investment in the country. In a number of areas such as big mining and petrochemical projects and among some others, attracting foreign capital would not only help in acquiring large investments and the complexity of skills required but would also facilitate the export of such goods to foreign markets.

However, the encouragement of foreign investment is not an easy task. The law drawn up for this purpose can be reviewed and modified in such a manner to make it more appealing to the foreign investor. But this is not enough. The foreign investor would rather want the whole envionment to be more favorable for his investment.

As far as the "Law to Encourage Foreign Investment in Iran" is concerned the general belief among commercial attaches of foreign embassies in Iran is that it is good on the whole. However, they have certain misgivings on the following points:

1. The law does not set any time limit for the Iranian authorities, who study the applications of foreign investors, to announce their decision. This, might keep foreign investors waiting for a long time without knowing where they stand. Sometimes owing to long delays foreign investors would give up the idea of investing in Iran fearing that such delays would occur later, too, when they have to settle certain issues with government authorities.
2. With regard to determining compensation charges in cases of expropriation, the law says that the Iranian courts have to decide on the amount of such charges. In the first place, a definite time limit should be set for the court to decide; otherwise, the case may just linger on for years. In the second place, the general view is that if the foreign investor did not agree with the decision of the Iranian court he should be allowed to

appeal to a court outside Iran and the country from which the investor comes.

3. In cases where the investor is taxed both by his government and the Iranian government arrangement should be made so that one of the two may tax the investor and double taxation may be avoided.

4. Although the law guarantees foreign capital it would help greatly if bilateral agreements are concluded with foreign countries, from which potential investors are expected to come. The purpose of these agreements would be that both Iran and the foreign country concerned guarantee the investment of foreign investors in Iran. In some cases this can be done without bilateral agreements. Although no such agreement exists between Iran and Germany, the latter has the Hermes Plan which guarantees German capital abroad. However, the existence of bilateral guarantees gives more confidence to the investor. The agreement may also settle the problem of double taxation and such problems as the ownership of landed property by foreign nationals.

A committee should be established of the representatives of the Ministries of Foreign Affairs, Finance, Industries, Justice and Plan Organization so as to revise the law and prepare a new bill for the Majlis.

All thatwas said concerns the law. However, the main problems of foreign investment do not arise from the law but from certain defects in the environment.

There must be created confidence in foreign investors that the spirit of the law is being acted upon seriously. The feeling prevailing among them is that the government might arbitrarily decide to do something contrary to the spirit of the law or to create obstacles. They also complain about administrative delays and the absence of an authority where they can ask for help and information.

If foreign investment is to be encouraged there must be established an office for foreign investment. The best location for such an office is Plan Organization where information and data on all development projects of Ministries are centralized and the foreign investor does not have to go from one government Ministry to another to get pieces of information from each. Such an office should give all possible assistance to investors and keep them abreast with information on potential markets, statistics on production and consumption, sources of raw materials and labor, and help investors to find proper location for their enterprises. In brief, foreign investors should be given a feeling that Iranian authorities will be giving them all possible assistance and advice.

There are certain general conditions, too, that encourage both private and foreign investment. These include:

1. Healthy monetary conditions and economic stability.
2. The existence of infra-structures that facilitate industrial investment such as roads, port facilities, electric power, skilled labor, etc.
3. Other external efficiencies such as the efficiency of judicial and administrative organizations, stability of laws and avoidance of sudden changes in business, tax, tariff and investment laws.

Section XVI.

Interim measures

The implementation of the Plan will be greatly facilitated if a number of measures are taken before the start of the Plan. The most important of these measures are the following:

1. The establishment of a tax commission at the Ministry of Finance to study the scope and nature of taxes and tax policies that will stimulate industrial investment and channel savings toward productive investment.
2. The establishment of a tariff commission charged with the duty of drawing up tariff policies that encourage the expansion of industries without spoiling the manufacturers and imposing exessive costs on buyers.
3. The establishment of a credit commission at the Central Bank for decisions on terms of various industrial loans. This commission can decide on the rates of interest, duration of loans, types of collateral and other terms concerning various industrial loans.
4. The establishment of a Foreign Investment Office at the Pla. Organization where all data concerning the Third Plan and the economy are already centralized. Such an office could assist potential foreign investors on possible useful investments that help the aims of the Plan and advise them on proper location, sources of raw material and labor.

5. The establishment of a commission to revise company law in order to adapt it with the aims of the country's development.

6. The work of reorganizing the Ministry of Industries should be continued and accelerated in order to prepare the Ministry for its new and expanding responsibilities. If the Ministry is in charge of supervising the work of existing industries and the establishment of new industries under the Third Plan it has to take the following measures:

   a) To establish a licensing commission which, in the light of past experience should draw up proper licensing policies and procedures with the aim of reaching the targets of the Plan and avoiding the concentration of factories in big cities.

   b) To develop technical standards for main industrial goods and to establish a bureau of industrial standards capable of supervising the quality of main industrial products in Iran.

   c) To establish an industrial cost accounting department to work out the cost of main industrial goods in Iran. This will help in developing proper tariffs on similar imported goods and raw materials for industrial use and will be useful in studying complaints on industrial costs objectively.

d) To establish a bureau in the Ministry to centralize all industrial and mining surveys so far made by various agencies so as to avoid duplication of work and to provide a central library of all such surveys.

e) To establish a bureau for surveys and technical assistance.

f) To expedite mining surveys now going on at the Ministry in order to have definite mining projects for the Third Plan.

APPENDIX

Appendix I. List of Government factories 104-144

Appendix II. List of Government mines 145-146

Appendix III. Suggested Development of Kerman Mining. 147-154

Appendix I

List of Government Factories

	Parent Organization
1. **Cement**	
1. Ray	Ministry of Industries & Mines (Construction Materials Co.)
2. Manjil	P.O.
3. Dorud	P.O. 33%
4. Fars	33% P.O.
2. **Canning**	
1. Shahi	Ministry of Industries & Mines. (Chemical Co.)
2. Meshed	P.O. owns and Ministry of Industries & Mines.
3. Isfahan	P.O. " " " " "
4. Azershahr	P.O. " " " " "
5. Bandar Abbas	Ministry of Finance (Shilat)
3. **Textiles**	
1. Shahi No. I	Ministry of Industries & Mines. (Textile Co.)
2. " No. II	P.O.
3. " No. III	P.O.
4. Tehran Tchitsazi	Ministry of Industries & Mines
5. Zafar	" " " " "
6. Behshahr	Textile Co. (M. I. M.)
7. Silk (Chalous) - closed	" "
4. **Dried Fruit**	
1. Maragheh	P.O.
5. **Date Packing**	
1. Khorramshahr	P.O.

6. Copper Smelting	
1. Ghani Abad	Army
7. Jute	
1. Shahi I	Ministry of Industries & Mines
2. Shahi II	" " " " "
8. Mechanical	
1. Vanak (Vocational school)	Ministry of Education
9. Sugar Beets	
1. Marvdasht	Ministry of Industries & Mines (Sugar Co.)
2. Abkooh	" " " " "
3. Torbat Haydarieh	" " " " "
4. Fassa	" " " " "
5. Shahabad	" " " " "
6. Miandoab	" " " " "
7. Chenaran	" " " " "
8. Shazand	" " " " "
9. Karaj	" " " " "
10. Bardsir	" " " " "
11. Resaieh	" " " " "
12. Kahrizak	" " " " "
13. Varamin (Refinery)	" " " " "
10. Refractory Materials	
1. Aminabad	(Construction Materials Co.) (M.I.M.)
11. Glycerine & Soap	
1. Ray	Chemical Co. (M.I.M.)
12. Vegetable Oil extraction mill.	
1. Varamin	Chemical Co. (M.I.M.)

13.	Chemical Factory	
1.	Rey	Chemical Co. (M.I.M.)
14.	Olive Oil	
1.	Rudbar	" "
15.	Milk Pasteurisation	
1.	Mehrabad	" "
16.	Cotton Gin	Cotton Co.
1.	Bandar Gaz	Ministry of Industries & Mines
2.	Gonbad	" " " " "
3.	Ali-Abad	" " " " "
4.	Babolsar	" " " " "
5.	Babol	" " " " "
6.	Jribar	" " " " "
7.	Kiakila	" " " " "
8.	Behshahr	" " " " "
9.	Sari	" " " " "
10.	Naka	" " " " "
11.	Varamin	" " " " "
12.	Garmsar	" " " " "
13.	Semnan	" " " " "
14.	Isfehan	" " " " "
15.	Borujerd	" " " " "
16.	Khorramabad	" " " " "
17.	Gilan Gharh	" " " " "
18.	Kermanshah	" " " " "
19.	Giraft	" " " " "

20.	Ahoodasht	
21.	Ahwaz	
22.	Shooshtar	
23.	Behbahan	Ministry of Customs & Monopoly
24.	Dezfool	" " " " "
5.	Ramhormoz	" " " " "
26.	Malayer	" " " " "
27.	Nahavand	Sugar Co. (warehouse)
17.	Rice Husking	
1.	Shahi	Ministry of Industries & Mines
2.	Bandar-Gaz	" " " " "
3.	Neka	" " " " "
4.	Mahmood-Abbad	Sold
5.	Gorgan	Sold
6.	Roodsar	Ministry of Customs & Monopoly
7.	Pahlavi	" " " " "
8.	Langarood	" " " " "
9.	Shahsavar	" " " " "
18.	Silk Cocoon	
1.	Rasht	Cotton Co., Ministry of Industries & Mines.
19.	Tea	
1.	Kumleh	Ministry of Customs & Monopolies
2.	Bibalan	"
3.	Sheib Kelaieh	"
4.	Lahijan	"
5.	Kelar-Abad	"
6.	Ghaleh Gardan	"

20. Tobacco	
1. Tobacco Factory (Tehran)	Ministry of Customs & Monopolies
21. Flour Mills	
8 of them	" " " " "
22. Bakery	
one	" " " " "
23. Wool Scouring	
one (Karaj)	Carpet Company
24. Rail-road ("ties")	
one (Amol)	Rail-road
25. Printing	
Five	Various owners
26. Brick Factory	
One	Mortgage Bank
27. Mint	
One	Ministry of Finance
28. Ice Factory	
Four	

Appendix II

Government Mining Establishments

Coal	
1. Shemshak	Mining Co. (M.I.M.)
2. Zirab	" "
3. Kajereh	" "
4. Kerman	" "
5. Torbat Jam	" "
Lead	
1. Khaneh Sormeh Isfahan	" "
2. Nakhlak	" "
3. Lakan Khomain	"(49-51)*
Chromite	
1. Fernmad Shahrood	" (49-51)*
2. Esfandogheh Sirjan	" (49-51)*
Copper	
1. Zanjan	Army
2. Abbas-Abad Meshed	Mining Co. (M.I.M.)
3. Ahar	"
Salt	
1. Hormoz	"
Red Oxide	
1. Zonooze	"
Iron Ore	
1. Semnan	"
Gold	
1. Mutteh	"

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* Mixed private-public ownership

Barite	
1. Ashtian	Mining Co. (M.I.M.)
Magnesite	
1. Fariman	" "
Natural Cement	
1. Jajorood	Construction Materials Co. (M.I.M.)

Appendix III

Mining Projects in Kerman Region

The following appendix is a reprinting of the "Summary and Recommendations" of the Report of Mineral Reconnaisance in the Kerman Region submitted to Plan Organization by Behre Dolbear & Co. in Bahman 1337. Six specific projects were recommended in this report. Some work has already been done on projects no. 1 and 2, but additional work is needed. The undertaking of these projects as part of the Third Plan would greatly advance our knowledge about one of the country's most promising mineral regions, a region intimately linked to the major port development at Bandar Abbas and its inland transport connections.

(Page references are to the main body of the Behre Dolbear report, on file in Plan Organization).

* * *

SUMMARY AND RECOMMENDATIONS

The purpose of the mineral reconnaissance was to determine the mineral possibilities of the Kerman Region and to propose a program of mineral development.

To this end, the more important mines and mineral deposits, both active and inactive, were inspected. The reconnaissance included the inspection of 66 mineral deposits, including those of asbestos, barite, borates, building stone, clay, coal, copper, chromite, ferruginous slate, fluorite, iron ore, lead and zinc, manganese, limestone, marble, magnesite, ochre, salt, sand containing heavy minerals, sulphur and turquoise. It was found that the value of mineral production of the Region as of November 1958 (mid 1337) was at a rate of about 7,500,000 rials ($ 100,000) per month and that some 700 persons were directly employed. About half of this production value came from one chromite operation, the remainder from four lead mines, two clay deposits, one coal mine and three small marble quarries. Many of these mining operations are intermittent and performed on a relatively small scale with lack of mechanization. All transportation is by truck since no railroad facilities exist.

The mineral industry in the Kerman Region can be expanded substantially, thus providing more wealth for the Region, employing more people and placing more of the mines on a continuing basis, all of which would contribute to the economic development of the Region.

Six Mineral Projects are recommended to accomplish this expansion of the mineral industry, and they can be carried out concurrently. They will require fifteen months for completion and are estimated to cost $2,648,000. In planning these projects, the following broad objectives were established:

1. Development of unexploited deposits to a point where they justify production and to provide data with which to interest private capital.
2. Provision of the technical assistance and data to mine owners necessary to attract capital for development programs.
3. Organization of geological mapping, exploration, compiling of data and technical procedures in a systematic manner as part of a long range program which might later be integrated into a national program.
4. Completion of the specific projects within reasonable time limits.
5. Training of Iranian technical personnel in mining, mineral beneficiation, geological techniques and on the most modern methods of ore finding (including geophysical methods), detailed geological mapping and diamond drilling.

Effect of Projects on Economy of the Kerman Region

The work included in the six Mineral Projects could result in a substantial increase in the mineral production of the Kerman Region and have far-reaching favorable effects on the development of its economy.

The recommended Mineral Projects are as follows:

Mineral Project No. 1

BAFQ IRON ORE DEPOSITS

The possibilities of establishing a major industry by putting the Bafq iron ore deposits into production are outstanding because of the large potential size of the operation. It is possibly the largest potential mining operation in Iran, both from the aspect of tonnage and value of product.

Inspection at six deposits indicate the possibility of iron ore reserves of as much as 20 million tons above the visible base. Geological evidence indicates that the ore continues with depth. If the deposits are continuous with the same horizontal dimensions as at surface, then a total reserve of over 100 million tons of ore might be available for open pit operations, the lowest cost method of mining. Potential tonnage is greater than this, as there are additional deposits outside outside but near the contract area which were not inspected and exploration work can reasonably be expected to reveal new deposits.

Preliminary sampling indicates a grade at five deposits of over 60 per cent iron, most of the samples containing from 64 to 65 per cent iron. The grade at Maregan, one of the smaller deposits, is about 45 per cent iron due to limestone inclusions within the ore. In the samples taken at the Bafq deposit, which contains 70 per cent of the reserves, phosphorous was 0.290 per cent; sulphur 0.04 per cent; and silica 1.45 per cent, all below maximum allowable limits. The ore, where exposed, is hard, massive and blocky. On the basis of high iron content, chemical composition and physical qualities, the ore may be classified as of "direct shipping grade", the most desirable of all types of iron ore.

These deposits might provide ore for domestic iron or steel production and at the same time for the export of several million tons of ore or iron per year. Hard, high grade direct shipping ore is usually in demand. Importing nations include Japan, West Germany, Great Britain, Belgium, Luxembourg, the Netherlands and the United States.

A railroad to Bandar Abbas would be required for transporting the ore for export, and it is possible that this railroad might be financed by private interests in connection with the exploitation of the iron ore deposits, since similar financing under comparable circumstances has been accomplished in other countries.

It is, therefore, recommended that the Bafq iron ore deposits be thoroughly investigated by exploratory and development program and that economic studies be made.

Mineral Project No. 1 is proposed to accomplish this objective. The program includes among other things 4,500 meters of diamond drilling as well as ground and serial geophysical surveys.

It is recommended that the iron ore deposits outside the Kerman Development Corporation contract acreas be included in the investigation.

The estimated cost of Mineral Project No. 1 is $386,000., and details as to time and personnel required are given on page 79 and 82.

Mineral Project No. 2

HODJEDK COAL SEAMS

Production at the Hodjedk coal mine, owned and operated by the Plan Organization, amounts to about 50 tons of coal per day, which is sold either in the form of coal or coke. Coal reserves of the area have been estimated by geologists of the Iran Oil Company at 38 million tons. Geological conditions indicate that total reserves are greater than this estimate. The coal seams, while steeply inclined, show little close folding or faulting, and there appear to be no unusual operating problems.

Testing of several characteristic samples taken by the mineral reconnaissance team of coal in place, showed that good quality matallurgical coke, with exceptional stability and average hardness, can be made from two of the four main seams, namely Zones B and D. In these coal samples, ash averaged 11.1 per cent, sulphur 2.4 per cent, fixed carbon 61.4 per cent on a moisture-free basis and the calorific value 8,400 kg.-cal. per kilogram (moisture and ash-free basis). The yield of coke from coal was 71.2 per cent. While the quality of the coke from the other important seam -- Zone C -- is not good enough to be used alone, such coal could be blended with coal from the other seams. The ash content of all the coals can probably be reduced by cleaning. The coal from all seams is friable and would require very little crushing for use in a coke or steam plant, which is an advantageous factor. The amount of lump coal varies from 5 to 10 per cent.

The Plan Organization expects to increase production from the present 50-ton-a-day rate to 75 to 100 tons of coal per day, as well as to improve operating techniques during 1959/1960.

The Hadjedk coal seams, however, could be exploited on a much larger scale and could provide coke for a domestic iron or steel mill. Briquettes for domestic use could also be made both for industry and in homes to replace the dwindling supply of local wood which is being used to make charcoal.

Metallurgical coke might also be exported to such countries as Pakistan, Japan, Egypt, Spain and Yugoslavia because a market exists in these countries. It is understood from Plan Organization that Pakistan might take as much as 600,000 tons of coke per year. Various by-products might also be produced from the coke operation. Coal and other coal products might also be exported. Exports of coal, coke, briquettes and other coal products might thus contribute a substantial tonnage of freight for a railroad to Bandar Abbas.

It is recommended that the coal seams at Hodjedk be fully investigated. Additional data on the reserves and quality of the coal are required for feasibility studies as a basis for investment of capital for expansion of production. The program recommended includes surface and underground diamond drilling, underground development work, particularly drifting along the coal seams, and sampling and testing.

Mineral Project No. 2 is estimated to cost $1,413,000, and details as to time and personnel required are shown on page 83 to 86 inclusive.

Mineral Project No. 3

LEAD-ZINC DEPOSITS

Production of hand-sorted lead concentrates, containing 35 to 45 per cent lead with some zinc and silver, is at the rate of about 2,000 tons per year. These concentrates come from exploratory operations at four properties. Production is on an intermittent basis, the policy being to mine only high grade ore that can be sorted by hand to make a product suitable for shipping. Production could not only be increased but also put on a continuing basis if necessary ore reserves were found and developed. Geological data indicate that this is possible and that the discovery of new deposits may be expected.

It is therefore recommended that the known deposits, both privately and publicly owned, be mapped in detail, sampled and to a limited extent explored by diamond drilling and geophysical surveying. Specific development programs would then be laid out. Using the data from this work as a basis, exploration of favorable formations away from the mines would then be undertaken. Results of these programs may be provided to mine operators with the expectation that this would encourage the investment of private capital. Programs of this type have proven very successful in finding and developing ore bodies in many countries as they provide accurate and comprehensive information which is not otherwise available for potential investors.

The estimated cost of Mineral Project No. 3 is $212,000 and details as to time and personnel required are given on pages 87 to 89.

Mineral Project No. 4

CHROMITE DEPOSITS

Chromite production is at the rate of 2,500 tons per month, all by the Esfandageh Chromite Company. This company is owned 51 per cent by the Plan Organization and 49 per cent by private interests. In addition to production, this company is undertaking the underground development of a new low level at the Ab-e-Dasht mine. Except for the main Ab-e-Dasht ore body, the shape and size of the deposits are such that it is difficult to develop reserves. Most of the ore is mined as it is encountered in the working.

No comprehensive or detailed exploration is being carried out in any of the areas favorable for chromite deposits. Additional deposits may be found by systematic investigation since the areas are large. It is essential that those areas selected for detailed intensive exploration be restricted to the most favorable sections.

It is recommended, therefore, that as a first step, a detailed investigation be made of the mode of occurrence of known deposits and that usefulness of geophysical prospecting techniques such as gravimeter surveys be determined. The data so obtained will then serve as a guide for exploration elsewhere.

The estimated cost of Mineral Project No. 4 is $ 163,000, and details as to time and personnel required are given on page 90 to 92.

Mineral Project No. 5

MISCELLANEOUS MINERALS

Projects Nos. 1 to 4, inclusive, deal with specific mineral deposits. In addition to these, however, there are many occurrences of other minerals which warrant further exploration and development.

Included among these are known deposits of barite, borates, clay, flourite, magnesite, manganese, ochre, salt and various kinds of building materials. These deposits should be first explored in a preliminary way, and sampled to determine quality, and then the potential tonnage and the economics of operation should be investigated.

The possible utilization of the extensive magnesite deposits in particular should be adequately investigated for production of both light-burned and refractory magnesite. Magnesite deposits are not widespread throughout the world, and while competition for markets is keen the economics of exploiting the deposits in the Kerman Region may be such that a share of the world market may be obtainable. A domestic steel mill would provide an excellent market.

There are also prospects and occurrences of asbestos, copper and other minerals which have sufficient possibilities to warrant additional exploration.

Cement raw materials including limestone, clay and shales, should be investigated.

Finally, there are large areas in the Kerman Region favorable for mineral deposition of several types which have not been thoroughly prospected or mapped geologically.

It is recommended that a general prospecting and exploration program of the entire Region be undertaken following the pattern used in Geological Surveys of many other countries. Such work should be part of a long-range mineral development program.

Mineral Project No. 5 is, therefore, recommended to map, sample and explore by trenching and diamond drilling the known mineral occurrences and to prospect for new deposits on the basis of geological data.

The estimated cost of Mineral Project No. 5 is $207,000, and details as to time and personnel required are shown on pages 93 to 95.

Mineral Project No. 6

PROJECT COORDINATION AND LONG RANGE-PLANNING

This is a program for providing the basic data for the expansion of the mineral industry of the Region and centralizing such data so that they are readily available when required.

While field work progressed under Mineral Projects Nos. 1 to 5 inclusive, activities of Project No. 6 would be largely confined to a central headquarters at Kerman where all geological and exploratory work being carried out would be correlated and standardized. Geological maps would be drawn on a standard set of scales, and systematic record keeping of assays, surface work, diamond drilling, exploration and development would be established. An adequate reference library would be established which would include copies of prior reports and of other data heretofore accumulated. Technical advice and assistance would be made available to local prospectors.

The project includes the establishment of a laboratory for sample preparation, mineral identification, assaying and chemical analysis. The bulk of the analyses to be done for Projects Nos. 1 to 5, inclusive, could be carried out in this laboratory. This would result in a substantial saving in cost of analyses as compared to having them done elsewhere.

Supervision and direction of Projects Nos. 1 to 5 would be centralized in Kerman. These projects will be coordinated as closely as possible to make the most efficient use of personnel and equipment. A long-range program of geological mapping and prospecting would be laid out as personnel and equipment became available from other projects. This work would be integrated with that of established government agencies to avoid duplication of effort and to facilitate furture continuation of the program.

It is recommended, therefore, that a central head-quarters be established in Kerman for providing general technical, laboratory, mapping, accounting and supervisory facilities.

The estimated cost of Mineral Project No. 6 is $267,000, and details as to time and personnel required are given on pages 96 to 98.

Summary of Personnel and Estimated Costs of Projects

Mineral Project	No. Personnel Required	Estimated Cost
No. 1	26	$ 386,000
No. 2	182	1,413,000
No. 3	16	212,000
No. 4	10	163,000
No. 5	24	207,000
No. 6	24	267,000
Total:	282	$ 2,648,000